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ABSTRACT

The special issue of the journal, Children in Contemporary Society, contains 17 brief articles on environmental design for young handicapped and normal children. Articles have the following titles: "Introduction", "Environmental Design and Architecture", "Why Is Environmental Design Important to Young Children", "Children's Hospital National Medical Center", "Environmental Changes in An Open School", "Caregie-Mellon's Children's School", "Western Pennsylvania School for Blind Children", "Trends In State Therapeutic Environments For Children in Pennsylvania", "Infant/Toddler Creative Play Center", "A Place For Children", "Jousting With Bureaucratic Windmills", "Toy Lending Library", "The Children's Hospital Medical Center", "The Children's Museum of Boston", "The Fight for Sight Children's Eye Clinic", "Western Psychiatric Institute and Clinic", and "Professional Literature in Environmental Design". (DB)

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CHILDREN IN CONTEMPORARY SOCIETY

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SPECIAL ISSUE: Environmental Design For Young Children

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Children In Contemporary Society is an interdisciplinary journal for professionals devoted to the growth and development of young children in contemporary society.

The policy of this journal is to study various contemporary educational, social, medical, political, and economic issues which directly or indirectly influence the lives of young children. Each publication is organized around a specific issue and includes a collection of interdisciplinary readings which relate to the selected topic.

This journal is of value to individual professionals devoted to the growth and development of young children, to educational institutions and to child-care agencies.

Manuscripts are welcomed if they have not been previously published. The form and content of a manuscript should follow the form as indicated in the American Psychological Association Publication Manual, 1975 Revision. Send all manuscripts to: **Children in Contemporary Society**, P.O. Box 11173, Pittsburgh, Pennsylvania 15237.

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CHILDREN IN CONTEMPORARY SOCIETY

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This issue was made possible by a grant received from The Maurice Falk Medical Fund, Pittsburgh, Pennsylvania.

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Introduction PHILIP B. HALLEN

"In recent years, the country has become increasingly aware of the need to provide living and working environments that allow full participation of handicapped persons and other citizen groups in the daily activities of their choice.

Further, institutions serving various groups with special problems, i.e., the mentally ill, retarded, older persons, and prisoners, have begun to recognize the necessity of providing therapeutic environments.

In the field of early childhood education, there is also an increasing understanding of the significance of carefully designed spaces which enhance and stimulate the child's creative interaction with his enlarging world.

This special issue of *Children in Contemporary Society* is timely and brings together a number of important new developments in the area of special environments for all categories of children. These papers add up to a statement about the absolute necessity of establishing working relationships between architects and designers, clinicians, administrators, and others responsible for the institutions which care for our children.

The working partnerships described in this issue should be helpful to planners and decision makers who are responsible for state and local governmental institutions as used in private facilities; what is really described is a creative process that has excited architects and clinicians. Each have seen the task in new and different ways with thoughts about special and normal children and new insights as to the dynamics the physical relationship of setting have to all human activities. The field needs this kind of thinking more than ever.

This issue is not only a collection of theoretical material. For example, there are also practical suggestions and design ideas that can be executed at low cost by an institution's maintenance department.

For these reasons the Falk Medical Fund is pleased to provide a subsidy for the special issue. The fund has had an interest in architecture and design as they related to clinical practice for many years.

A number of previous publications and programs in this area have resulted from this interest. The program in architectural psychology at the University of Utah had early support. A major series, *The Design of Community Mental Health Centers,* was published in 1965.

The contributors should be pleased with this important statement and its potential impact on the future of institutions serving the nation's citizens."

Philip B. Hallen, President
Maurice Falk Medical Fund

Environmental Design and Architecture 2

The Friendly Environment Versus The Hostile Environment

MIHAI MARCU

John Dewey in *Art As Experience* (1934) states that:

> As the developing growth of an individual from birth to maturity is the result of the interaction of organism with surroundings, so so culture is the product not of efforts men put forth in a void or just upon themselves, but of prolonged and cumulative interaction with the environment. (p. 28)

Life is composed of a succession of interactions between man and his environment. Some are especially memorable because they represent a sudden change, but most represent just a fleeting moment in a long line of moments. The sum of these interactions or experiences shapes our perception, response, and, consequently, our behavior.

It is our nature to strive to control our environment through a process often referred to as adaptability. We respond to a new environment by altering it just enough to reflect our basic needs for shelter and security as well as our personal needs for identity, privacy, and choice which are dictated by our cultural, social, and economic backgrounds. When control of the environment is difficult or impossible, we face a hostile situation, and the constant struggle between man and the environment will lead to frustration and general discontent. Clifford B. Moller in *Architectural Environment and Our Mental Health* (1968) states that:

> The subtle frustration of one's drive for security encountered day after day in an attempt to adapt to this hostile environment can produce a hidden state of anxiety that makes it impossible for him to ever achieve mental health. (p. 36)

Mihai Marcu, Registered Architect: Partner-in-Charge of Design, The IKM Partnership, Pittsburgh, Pennsylvania.

On the other hand, when the environment is supportive or adaptable, control is within reach; **we feel secure.**

In *Security As A Motivation of Human Behavior* (1964), Dr. Borel suggests that seucrity represents our basic need and that there is a link between man's constant drive to control his environment and the need for security. The successful control of the environment "represents security" (p. 105-108). While Dr. Borel defines environment as "all objects and forces perceived as external to the individual" (p. 105), the built environment which is created by architects, planners, and administrators, represents the space within which most human activities take place. This is very well stated by Bruno Zevi in **Architecture As Space** (1957).

> The facade and walls of a house, church or palace, no matter how beautiful they may be, are only the container – the box . . .; the content is the internal space . . . Architecture is environment – the stage on which our lives unfold. (p. 32)

It is important to emphasize that any enclosure, whether or not it is architecturally designed, sets the "stage" for our activities; in the course of striving to adapt to this stage, we bring with us strong influences of former environmental encounters. It is, therefore, essential prior to the creation of the "box" to fully understand the individual and common characteristics of the group for whom the "box" is being created.

Environmental design is, then, the careful manipulation of space in order to create a positive, adaptable setting for a specific individual or group. Surprisingly, this effort represents a new dimension in the building design process. While sensitive architects and their clients have attempted to design with a particular concern for human needs, the success of those projects was directly dependent upon intuition and guesswork rather than documented fact. Fortunately, the past several years have seen the emergence of a new field of study which is becoming known as Man-Environment Relations.

The group involved in M.E.R encompasses primarily anthropologists, psychologists, and sociologists whose individual attention is focused on the built environment and its

relationship to men. Some of the areas being researched include: the effects of the environment on man; the effects of man on the environment (architects?); the need for identity, privacy; the cultural contributors to the way man responds to the environment, as well as studies focusing on particular groups with common life styles from common economic classes and age levels and with common physical or emotional handicaps. This body of work which is being produced by these environmental social scientists is becoming very helpful in filling the void between theory and fact.

It is finally becoming clear that the responsibility of the building design team goes far beyond the "box" and its functional relationships; by showing little or no concern for the appropriate content, we are guilty of serious oversight.

The challenge ahead lies clearly in the area of education. More architects and particularly their clients must become aware of the need for environmental design, since the present building design process does not permit either adequate time or the necessary dialogue between the designer and the user. Presently this rather unusual approach requires a certain element of dedication and self-sacrifice; however, the results highly justify the effort. results highly justify the effort.

We have penetrated the "box" and touched people. As far as we are concerned, nothing can be more rewarding.

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3 Why Is Environmental Design Important to Young Children

ANITA R. OLDS

The Environment is the Developmental Curriculum

At birth, a child enters a physical and social environment with which he will forever need to interact in order to survive. The skills, attitudes, and concepts which he acquires over the course of his lifetime are not, however, simply the expression of hereditary endowments played out or made manifest in the environment. Nor will external forces alone, acting upon hereditary givens, lead to growth. Rather, according to the developmental psychologist Jean Piaget (1963), the very nature and substance of skills, attitudes, and mental structures is forged by an inseparable and continual **interaction** of the child with objects, persons, and events outside himself. Development is a process of adaptation, whereby the child, in order to grow, must effect changes upon his environment and, in turn, adapt to the demands which the environment places upon him. This child-environment interaction not only contributes to, but actually **constitutes** development, as an intrinsic property of life and as the developmental curriculum. To achieve true understanding, each child invents anew, for himself, the knowledge being sought, by observing the consequences of his personal activity upon things and events outside of him (Piaget, 1973).

Anita R. Olds, Ph.D: Independent consultant on children's environments; Lecturer, Eliot-Pearson Department of Child Study, Tufts University, Medford, Massachusetts. Consultant to The Children's Hospital Medical Center, Boston, Massachusetts, Glavin Regional Center, Shrewsbury, Massachusetts; Children's Hospital National Medical Center, Washington, D.C.

Now, in order to interact with and operate upon external forces, children must be active and in motion. Few creatures alive are busier and more energic than the preschooler—trying, doing, manipulating, climbing, running, crawling, hopping, spinning on, under, around, and inside everything. Yet, there is nothing quite so aggravating and enervating to caregivers as the incessant, unpredictable activity of many little bodies each moving to a separate drummer. To orchestrate such cacophony, to reduce it to tolerable proportions, adults typically intervene by trying to **stop** children's movement through rules, admonitions, or the withdrawal of materials and facilities. It seems easier to predict and control the behavior of 30 children forced to sit in chairs or the activities generated by materials whose accessibility is totally ministered by the teacher. And, it is often assumed that restricting the territory available for action can be an effective restraint on the amount of movements which will occur in a space. But, to deny activity in these ways is to crush development at its source. And, insofar as the interaction between a child and his environment is an intrinsic property of life, it is doomed to failure.

For, despite the constraints and prohibitions, the needs to perform and to move will still express themselves. They will go unchanneled and undirected and then emerge as disruptive rather than constructive behaviors. Thus, children fidget in their seats when they cannot get out of them, they incessantly try to gain access to prohibited materials behind the teacher's back, and they insist upon chasing each other around tables and chairs even at the risk of knocking over furniture and other classmates.

When disruptive behaviors become repetitive, we often begin to suspect personal deficiencies, such as poor motivation, lack of intelligence, emotional disturbance, and hyperactivity, and tend to locate causes **within** the child. In some cases, such assessment may be correct. But, it is equally likely that the restrictions we place on children's activities by limiting the classroom environment contribute substantially to many so-called behavioral and learning difficulties. And, it is certainly not the case that all disruptive actions in a classroom are due to the short-

comings of individuals. Instead, the primary "cause" of many actions on a child's part may simply be the presence or absence of particular facilities and the arrangement of those facilities in the spatial context in which behavior is expressed.

We do not, for example, constrain expressive running and jumping on a playground in the way we would limit it inside a room, because the context in which the movement takes place can, in some way, support both the behavior and the teacher's capacity to keep it within manageable proportions. Indoors, instead of placing arbitrary and blanket limitations upon movement, imposed without regard for the developmental needs of children, we should give thought to the environmental supports needed to allow activities their fullest reign within an overall physical plan that makes such movement tolerable for all. Teachers can exercise control over such external factors, rather than over the internal psychic ones. It is through environmental design that the tension between the child's developmental need for movement and everyone's need (especially the adult's) for organizing the movement can be resolved.

Ultimately, a child's ability to develop optimally by performing productively and non-disruptively is affected by (a) the amount and variety of things there are to do, (b) the variety of places there are in which to do them, and (c) the organization and accessibility of those things and places within the classroom space.

The Materials and Their Organization

Each material or facility in a room is an opportunity for exploration and discovery. The broader the variety of materials, the greater the chances that the unique interests of individuals will be met and that varying levels of complexity will be available to challenge children at different stages in their development.

However, the existence of materials is not sufficient to guarantee their active manipulation since the manner in which they are stored and displayed controls their accessibility and communicates how teachers wish to have them used. One message may be "Hands off. These materials are too precious to be put out for your use. You can only have what I choose." Another is "Look, children, at my beautiful wares. Come touch them, come use them, come learn from them." Similarly, the placement of materials within the total physical context affects how each is perceived. A puzzle invitingly displayed on a wide counter may be irresistible, whereas stacked in a puzzle rack or haphazardly piled on a shelf, pieces disarrayed and missing, it generates little interest.

Many disruptive behaviors in a classroom occur because of insufficient and poorly organized material supports for tasks. The full, constructive execution of an activity requires that all the props necessary for performing it be near at hand, in sufficient supply, available when needed, and a compromise balanced stock of items. Once the desire to do something is initiated, children have little tolerance for waiting for the activity to be "set up," or sustaining interest across periods of interruption while someone searches for the necessary tools. Similarly, too many materials in one place can make it look chaotic, as if it is impossible to know where to begin, while too few materials can make a place seem drab and uninteresting, as if nothing is going on.

The Places and Their Organization

Disruptive behaviors also occur because of the inadequate or improper physical separation of activities. By creating a variety of spaces within a room, each of which is designed for a different function, it becomes possible to keep noisy and quiet, messy and clean, expansive and contained activities apart, and even to support as many as 15 or 20 different functions at one time.

For example, small unit blocks placed at an entry which is spacious but part of the main line of transit, generally receive only sporadic use. Locate them in a well-bounded, protected area across which no one can traffic, and they are objects of limitless fascination. Also, if the block area is at the opposite end of the room from the gerbil cage, there is less likelihood that blocks will become instruments for badgering small creatures. A designated, well-provisioned interior space for jumping and climbing is much preferred by children to the exploitation of couches and tables for

the same purposes. And little boys who run wildly about a room "shooting" targets and getting in everyone's way are far less disruptive when given a **place** in which to act out their fantasy games and the opportunity, through the provision of props, to shape that space to their own needs.

Well-designed activity areas, intended to support particular functions, can be compared to the rooms of a house. Just as a living room, bedroom, and kitchen vary in function, size, activity level, and the postures they engender in us, so too must classroom activity areas vary in the things done in them (read, dance, pound a hammer, pretend to be Batman), the number of persons they accommodate (1, 3-6, 10-30), the postures they enable occupants to assume (lying, sitting, standing), the work surfaces they provide (table, floors, counters, walls), and the activity levels they engender (resting, puzzle solving, running).

In fact, an area, like a room, is more than tables and props. It is a place with a location, boundaries to indicate where it begins and and ends, work surfaces to support activity, facilities for storing and displaying materials used on the work surfaces, and a mood or personality which makes it look and feel different from other areas. Well-organized activity areas, like well-organized homes, regulate behavior and the use of materials by giving everything a place and by providing places where, within clear physical limits, things can be created and explored.

When classroom areas contain the elements and vary along the dimensions suggested above, it is indeed possible to provide a wide range of choices for movement and activity within a single space and to tolerate the movement because it is organized and constrained by the contexts in which it occurs.

Classrooms are Institutions

Child care centers and nursery schools are frequently located in institutional buildings such as churches, schools, and markets. Unlike the home environment, institutional spaces can be quite homogeneous and sterile, with cold, shiny, tile floors, multiple chairs and tables of identical design and hard finish, dull-colored walls lacking recesses or changes in texture, ceilings or uniform height which dwarf the size of the room's occupants, and fluorescent lights which spread a constant, high-powered glare over all activities indiscriminantly. Such environments deprive us of essential environmentally-derived sensory stimulation for maintaining mental and physical alertness and contribute to feelings of boredom, listlessness, and dislike for the settings in which learning takes place. To counteract these negative institutional messages, and hence to use the environment in the service of learning, the teacher will need to make the classroom sensory rich, varied, and comfortable. A few of the many physical dimensions that can be modified to introduce variety into a setting are **floor height** (raised and lowered levels, pits, platforms, lofts, and climbing structures); **ceiling height** (canopies, eaves, skylights); **boundary height** (walls, half-height dividers, low toy cases); **lighting** (natural, fluorescent, incandescent, local, indirect); **visual interest** (wall murals, classical works of art, children's paintings, views to trees and sky); **auditory interest** (the hum of voices, mechanical gadgets, music, birds chirping, gerbils scratching, children laughing); **olfactory interest** (cookies baking, fresh flowers in a vase, animal fur and habitats); **textural interest** (wood, fabric, carpet, fur, plastic, formica, glass); **kinesthetic interest** (things to touch with hands and skin, things to crawl into and upon, opportunities to see the environment from different spatial vantage points).

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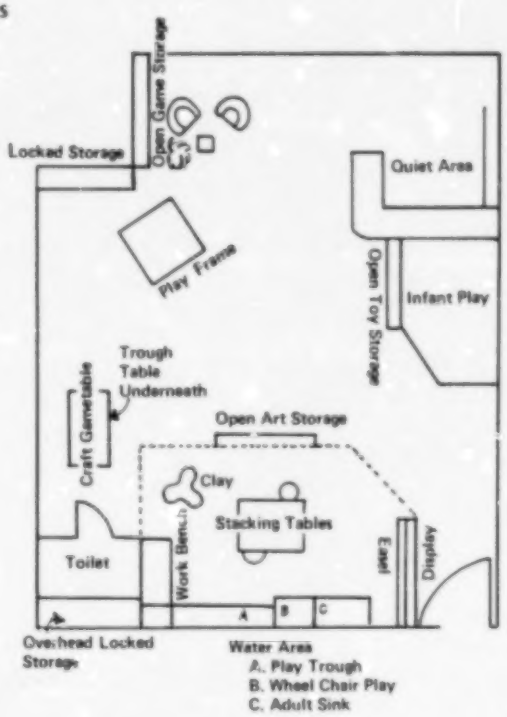
Architecture is frozen music

Goethe

Children's Hospital National Medical Center

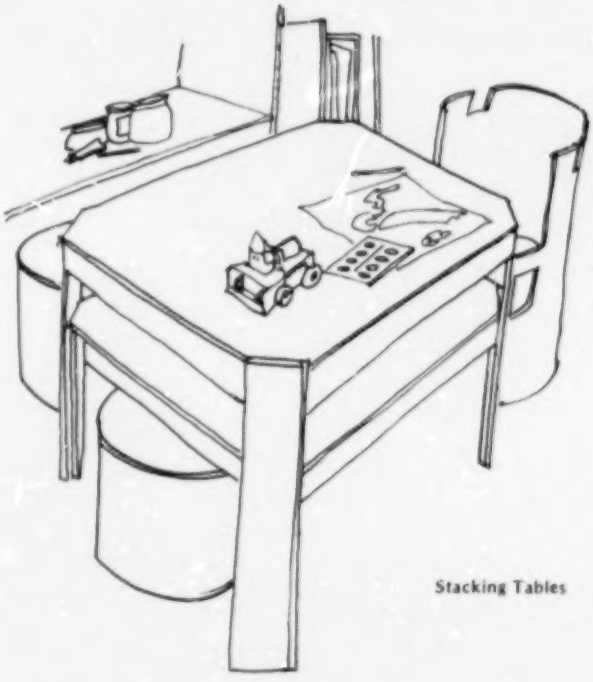
4 Washington D.C., Designed by Anita Olds



Floor Plan of the Cardiology Playroom This floor plan shows the basic layout of the facilities provided for the cardiology playroom which accommodates cardiac patients ages infant through 19 years. This space was extremely challenging to design because of the wide age ranges to be accommodated. It is extremely important that the space not look too infantile or else teenagers and older patients will be turned off to entering it. In the foreground is the messy play area To the left is a table that might be used for large games and skill type activities in which older children like to participate. Beyond that is the playframe here shown freestanding, unlike the case at Boston Children's Hospital, so that children may interact with it and enter it from all four sides. This playframe is 4 feet x 4 feet as opposed to the 4 feet x 3 feet one in Boston. Behind the playframe is a large floor to ceiling storage cabinet, the lower half of which has doors which have a lexan mirrored front. It was designed so that children could move aside the doors in order to reveal dress-up clothes storage. This way they could dress up in hats and pretend clothes and masks and look at themselves on the mirrored doors. These props would be immediately adjacent to the playframe where activities having to do with house and dramatic play might occur. Behind the playframe are two comfortable lounge chairs, a book case for storing games, and a flap game table, designed to be a special separate seating space for teenagers or parents who desire some privacy and sense of separation from other activities in the room. Next to that is a carpeted banquette sitting space, complete with bookracks. This banquette looks out over the city through windows that show a magnificent view. This was intended as a quiet place for adults, teenagers, and children to come to cuddle, rest, and just relax in the room with some sense of removal from the rest of the space. In the foreground, on the right, is depicted the infant deck.

Cardiology Playroom

Cardiology Playroom This depicts an artist's representation of the facilities to be provided in the messy play area of the playroom for cardiology patients. The facilities going from left to right include a stand-up 4 feet high by 6 feet long easel, a sink for adult use, a water play trough designed to accommodate a child in a wheel chair, water play troughs at standing heights for ambulatory children, and a work bench with tool display for doing activities involving working with wood, or cooking, or any craft desired. On the right is visible the back side of an art storage unit. The back of the bookcase has mounted on it a sheet of homosote which then provides a tack surface on the bookcase allowing it to be both a room divider and a useful element for display. In the center of the space are two stacking tables around which children may sit to engage in arts and crafts activities or eat.



Stacking Tables

Stacking Tables Here are tables designed to stack one under the other to reduce the amount of space consumed by tables during most of the day. At meal times, the two tables are separated to accommodate 12

(Continued on page 32)

Environmental Changes In An Open School

KARROL BACHMAN

5

The McEwan Open School, Pittsburgh, Pennsylvania, had prided itself on being a comfortable place for people. It had offered a non-threatening environment for its pre-school and elementary students, yet staff members recognized that they were separated from their environment. They were working and playing in a building which conveyed a feeling that it belonged to somebody else. Learning that we wore emotional blinders, we realized that we had stopped "seeing" our surroundings, and had stopped "feeling" the impact it had on us. Unfortunately, most people tolerate impoverished work environments because they never invest in them physically or, more importantly, emotionally. Families in a home setting would never settle for the lack of comfort, variety, and privacy that most institutions impose upon us.

To improve our environment, we consulted Dr. Anita Olds, a developmental psychologist from Tufts University, Medford, Massachusetts, who specializes in designing environments (classrooms, playrooms, playgrounds). To obtain money for the consulting fees, we scheduled her to do a workshop for the public. The money collected from the workshop permitted us to pay her for consulting with our staff for a day.

We found Dr. Olds' recommendations and the following procedures to be most helpful. The following guidelines will provide a practi-

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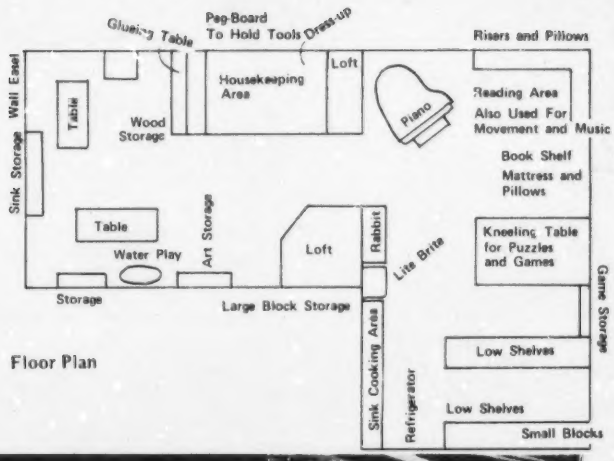
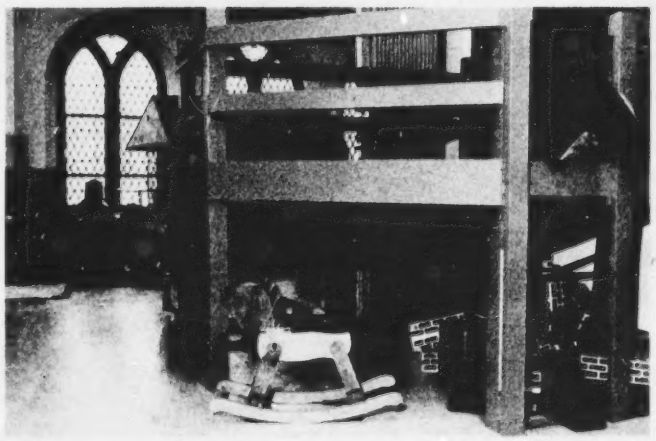
Karrol Bachman: Co-founder and Director of McEwan Open School, a small private, non-profit preschool and elementary school. The school has been in operation for eight years in facilities generously donated by the Third Presbyterian Church, Pittsburgh, Pennsylvania.



Floor Plan

Block Corner

Kitchen



Loft

Karrol Bachman, Director, in the reading corner.

cal step-by-step approach for other agencies and institutions contemplating similar environmental changes.

Visit schools which have changed the classroom environment. Take a notebook, tape measure, and camera (use Ecktachrome film: ASA setting 400 which makes using a flash attachment unnecessary; ask the developer to "push" the film); when photographing settings, it is helpful and necessary to place standard-sized objects and children in the picture for future comparative study purposes.

Observe the children in your program. We learned to carefully observe the way children use a classroom, watching to see if they were spontaneously reorganizing or creating things that our classroom spaces lacked. Before we built our fantasy play loft and housekeeping structure in the preschool room, children were constantly struggling to provide more privacy for them selves. By observing another group of children playing with blocks, we learned to separate the small blocks from the large block area. When left together in the same area, small blocks were most frequently used to fill in the gaps of large block structure. Now that the small blocks have their own area, we see much more of the intricate and precise building for which they were intended.

Think of your classroom program. From the present program, list the activities as well as other activities that would ideally expand and enrich your program. Some of the activities on our list included: painting, coloring, gluing, woodworking, pet care, music, reading, sand and water play games, puzzles, block play, and cooking.

Develop a floor plan which would designate the areas for the various activities in the room program. In developing a floor plan, arrange areas according to activities. Guidelines for this plan are:

- Identify areas for quiet activities and for noisy activities. For example, a reading corner, manipulative games, and small block areas could be placed together while a workbench, dramatic play, and music areas could be together.
- Identify activities requiring protection and privacy: isolate small block and puzzle area away from those requiring expansive movement, such as dramatic play.
- Consider traffic flow patterns.
- Give yourself a chance to live with and work around your plan by drawing the floor plan directly on the floor with masking tape. Tape out each area and structure as you envision them. Our masking-taped areas changed many times before we built anything.

Budget: for implementing program changes. It was encouraging to hear from Dr. Olds that enriching and improving an environment could be done in many inexpensive ways. The addition of a few colorful pillows, a picture, or a plant can completely change the message a room gives one. These little changes can make hard places soft. Most schools operate with "no budget" for remodeling, or on a highly limited budget. For materials and labor, solicit the support of parents, staff members, and maintenance personnel. Some materials can be donated, and some materials can be obtained from demolition sites as well as from local Goodwills, garage sales, and recycling centers. centers.

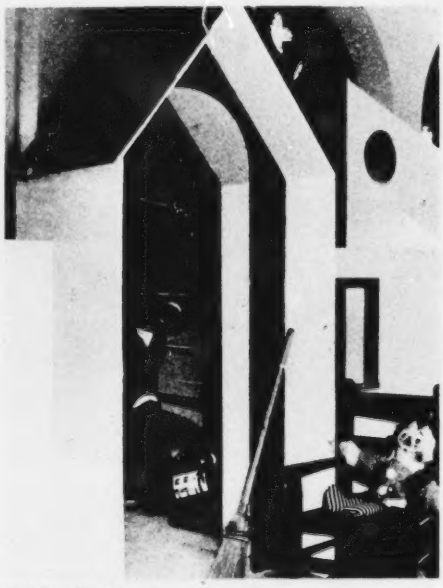
Renovation schedule. It is suggested an entire school be done as one project, when all are highly enthusiastic and motivated, versus doing one room at a time after the momentum ebbs. This could best be done during the summer months or at a time when there are no children or when there is a small, limited enrollment. Within a period of three months we made major changes in the overall use of space at McEwan. Each of our eight rooms was totally reorganized. We built four lofts, two sets of riser seating structures for meeting areas, five easels, two book display racks, numerous tables, 100 cubbies for lunch boxes and coats, and a greenhouse study area. We made many mistakes along the way. The greenhouse was originally intended to be a loft. It was contructed out of 2 x 2s and held together by bolts. Once the structure was standing, it was painfully obvious that it would never survive a classroom of children and that children would never survive it. One of our fast thinking teachers suggested that we turn it into a greenhouse. The frame was successfully converted into a lovely greenhouse; attractive plants now hang under "grow lights." Also, within the greenhouse, the addition of an aquarium, writing surfaces, and a couple of chairs turned an almost costly mistake into a comfortable, popular study area for older children.

Accessorizing. Remember the importance of texture and color. At one point we bought, at an unbelievably reasonable price, a new rug for the reading area, It was vivid, with stripes of yellow, red, and orange, and provided a color combination that blended well with the rest of the room. We laid the rug and were about to cut it to cover the riser seats in the quiet reading area. When one of us sat down on it, the rug actually seemed to scream. The design was much too "busy" and the colors too loud for a quiet reading area. We exchanged the rug for a soft blue one and found it to have a definite calming effect.

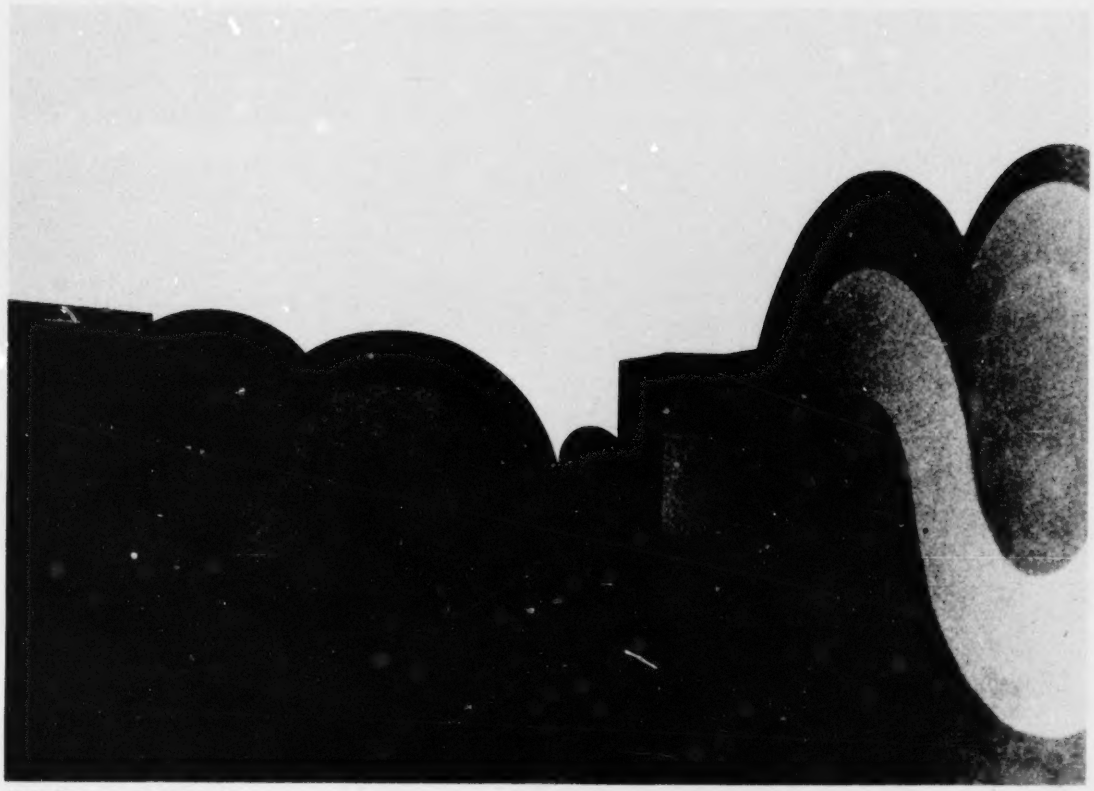
Be flexible and experiment. What looks good in a book or works well in another institution may not be appropriate in your setting. Though our major remodeling is behind us, our classrooms change each year as teachers continue to evaluate their classrooms and experiment with new ideas.

In conclusion, we have learned one important lesson: CLASSROOMS SPEAK TO CHILDREN. The ways in which we create, or fail to create, interesting and comfortable environments has a tremendous impact on how children learn and feel about themselves and others. The changes we made at McEwan have improved not only the quality of education we provide but also the quality of interactions among our staff and students. In essence, people feel better about who they are, where they are, and what they are doing.

Changes of this nature are exciting. We greatly enjoy sharing this excitement with others who are interested in creating innovative environments for children.



Kitchen Entrance



Main Entrance East Corridor

Carnegie Mellon's Children's School

ANN BALDWIN TAYLOR

6

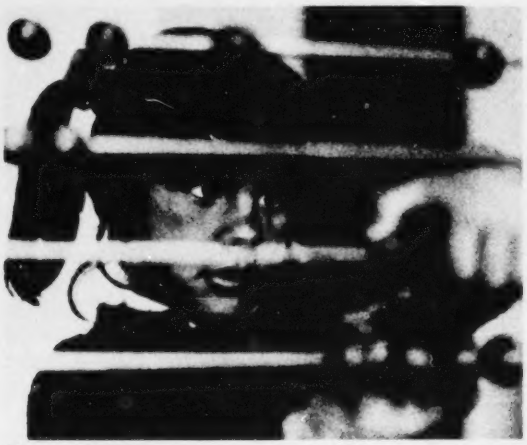
The Children's School is a child-centered program utilizing family grouping in an informal environment which has been carefully developed to provide interest and stimulation. The physical environment is comprised of 4,517 square feet of space primarily devoted to the learning environment which is rich with colors, shapes, and wall graphics. These contribute to the achievement of important goals of the school to impart aesthetic values and the unity and order of life. Specific features of the physical setting include the following:

- There are numerous designs on the walls of the school's many rooms
- Designs are at child level in most cases

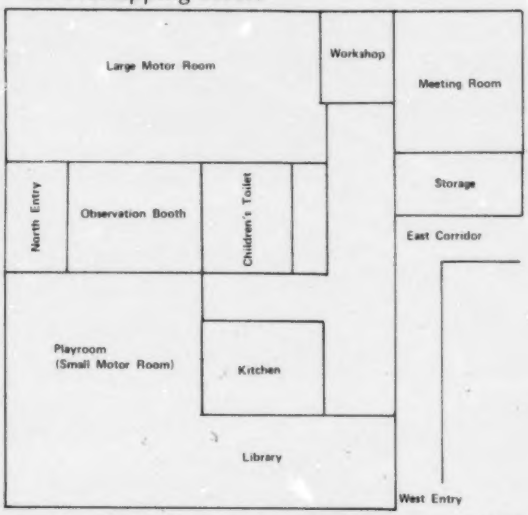
The Music (Meeting) Room.

Ann Baldwin Taylor, Director of Children's Center, Coordinator of Early Childhood teacher education at CMU.

- Designs are finished with a plastic coating making them washable
- Each graphic – letters, numbers, shapes – conveys a message to the learning child
- Lettered door signs instruct in early letter recognition and usage
- Lively patterns reinforce the concept of movement in the classroom used for large perceptual/gross motor activities
- Quiet secondary colors are used on the walls of the library, language arts, and reading area
- Bold letters and numbers are in primary colors
- A color blending wall utilizes large circles of overlapping colors

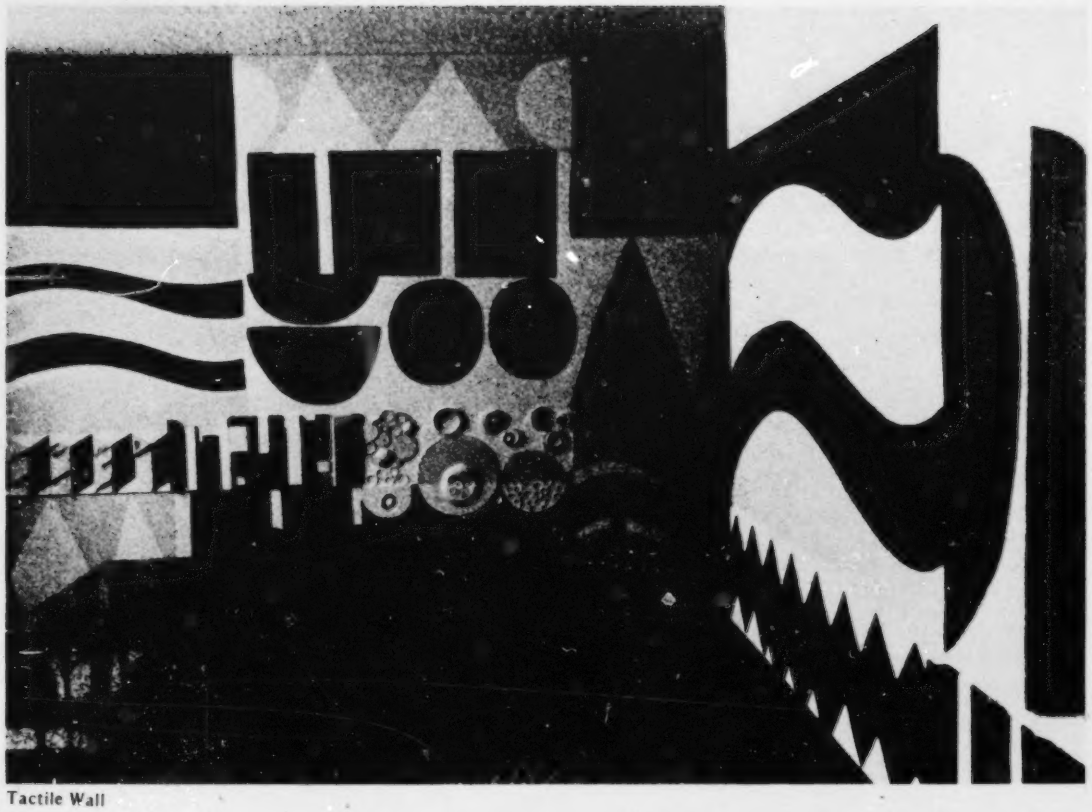


Abacus in Library.



Floor Plan

Mirror and Kitchen Area in Large Motor Room.

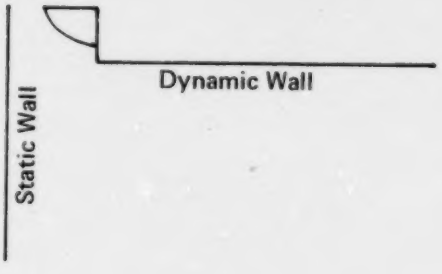


Tactile Wall

Western Pennsylvania School for Blind Children 7

JANET G. KLINEMAN

The tactile wall at the Western Pennsylvania School for Blind Children was designed by Joseph Ballay, head of the Design Department at Carnegie-Mellon University, along with two of his students, Bonnie Slavin and Bernard Gonzales. The two large floor-ceiling murals in the school provide varied experiences for the children who are all legally blind: art appreciation experiences, a trailing guide for mobility training, a reinforcement for the learning of basic geometric shapes and textures, and a relief from sameness in the school setting. Children with useful residual vision respond to the bright colors and associate the designs with their classroom learning experiences; children with little or no vision finger the different raised shapes and textures and learn through discovery.



Floor Plan

Mr. Ballay has described some of the particular features of the tactile wall mural:

- The whole room is divided into two wall areas. One is static; that is, the viewer can experience the wall from any vantage point and does not need to move from left to right. The other is dynamic; that is, the wall has a left/right orientation and involves several textural events. A few are unpleasant to feel and a few are very pleasant. The textures on the static wall occur at relatively the same height, while the graphics for the partially sighted are at a higher level.

(Continued on page 39)

Janet G. Klineman Ph.D.: Director of Early Education Programs, Western Pennsylvania School For The Blind, Pittsburgh, Pennsylvania.

Trends In State Therapeutic Environments For Children in Pennsylvania

H. ALLEN HANDFORD

In her fascinating book, *Psychiatry and the Community in Nineteenth Century America,* Ruth B. Caplan describes a very interesting event in the history of the treatment of the mentally ill in state institutions in this country. As mental institutions became larger and larger warehouses for patients, it was noted that there was a higher and higher incidence of tuberculosis among these patients. In the summer of 1901, it was decided in a New York hospital that patients be housed in canvas tents on the grounds of the hospital instead of the large over-crowded wards, since fresh air and sunshine were at that time the only known treatment for the disorder. Because these tents could only accommodate approximately 20 patients and staff, the net result was a great deal more activity stimulation of patients and staff; quite unexpectedly the mental behavior of the patients improved remarkably. This became known as "tent therapy" and caught on in a number of hospitals for some six years until the enthusiasm about it diminished. Despite its passing, it was a dramatic example of how the introduction of a truly novel kind of environment greatly improved the mental status of chronically ill mental patients.

In the Commonwealth of Pennsylvania, the first state mental hospital to serve children was Allentown State Hospital in Lehigh County, Pennsylvania. Programs for children there date bakc to the 1920s and continue to this day. Allentown was one of the first hopitals to use the cottage concept for the treatment of child mental patients. In essence this concept called for the creation of a homelike atmosphere on the grounds of the hospital in a building which was designed to resemble a family home. Over the years at Allentown, the cottage concept shifted to a larger, modified cottage architecture with three wings of subunits which are cottagelike in nature. The Shettel Cottage at Allentown houses 12 children in each wing. Each has a central living room, bedrooms surrounding the living room, as well as a small kitchen and exits to the play area. The units are tastefully decorated and conducive to homelike activities. Connecting the cottages is an area where psychiatrists and other therapists have their offices, providing the professional support for the units. As when they live at home, the children leave the units and cross a street to go to their school building for the day. They also leave the cottage area for other major recreational activities.

In 1963 construction was completed on the large 250-bed state psychiatric hospital near Philadelphia in Lower Bucks County. This hospital was known as Eastern State School and Hospital. Environmentally, it reflected the use of two concepts. One was the grouping into a large central clinical building which housed the professional offices, laboratories, wards, treatment rooms, seclusion rooms, a dining room, and a classroom with outdoor play areas adjacent to the classroom. The other was the cottage concept with a central living room, dining room, and a kitchen. Bedrooms branch off from the living room area while playgrounds surround the cottage, and access exits are provided from all the living areas.

With this dual arrangement Eastern State School and Hospital provides an interesting control experiment as to the comparative efficaciousness of cottage versus central building life. In reviewing the histories of youngsters chronically confined to the clinical building and in a non-homelike atmosphere, we may measure the rate of aggressive, destructive behavior caused by living in a confined environment against that of those living in a less confined cottage area. The rate of such behavior is significantly higher

(Continued on page 33)

H. Allen Handford, M.D.: Director, Children and Youth Programs, Office of Mental Health, Department of Public Welfare, Commonwealth of Pennsylvania, Harrisburg, Pennsylvania.

9 Infant/Toddler Creative Play Center

Infant/Toddler Creative Play Center, Glavin Regional Center, Shrewsbury, Massachusetts. A Project funded by the Massachusetts Department of Mental Health and planned, designed, and built by Other Ways for Educational and Environmental Development, 1975.

Wood Bridge Depicted here is a low suspension-bridge built from two by two's and rope. The bridge is extremely easy and inexpensive to build yet provides challenging coordination problems for children of all ages who choose to walk across it.

Wood Bridge

Wall Spinner Wherever possible attempts were made to experiment with the creation of interactive devices on walls. Depicted here is a marble spinner made from International Paper Company tubes cut to a depth of about 2 inches and then covered with a sheet of clear plexiglass. The spinners can be mounted on a lazy susan device to allow them to rotate easily.

Wall Spinner

Rope Climber If it is at all possible to mount a single hook in a ceiling, then a series of motoric experiences can be offered to children indoors, such as this rope and dowel "birdcage structure." This birdcage can be built easily at home and is used by one to five children for climbing, hanging, twirling, and tumbling experiences of various sorts. When not in use, it can be unhooked and folded away. Other items such as a tire swing, a rope to shinny up, a punching bag, and a monkey swing can be suspended from the same hook.

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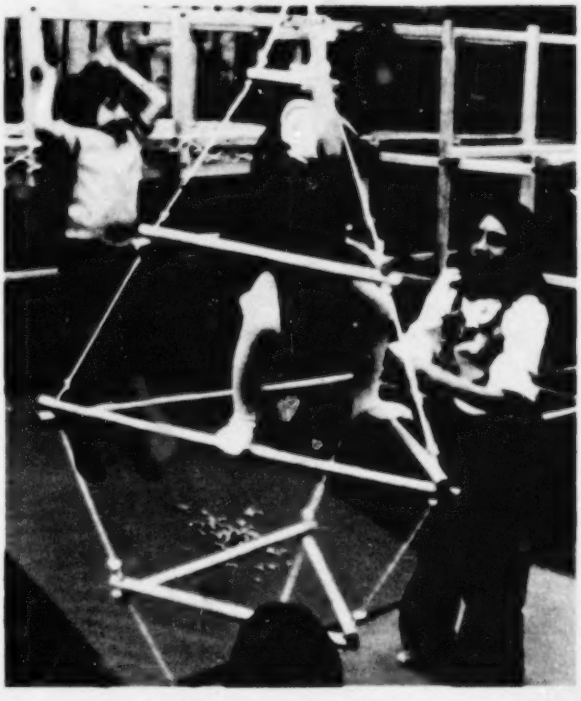


Rope Climber

Designer: Anita Olds

Contributors: Fred Todd
Henry Olds
Walter Drew
Don Kline
Carol Baldassari

10 A Place For Children

ALAN A. AXELSON, JOHN J. SLIMAN

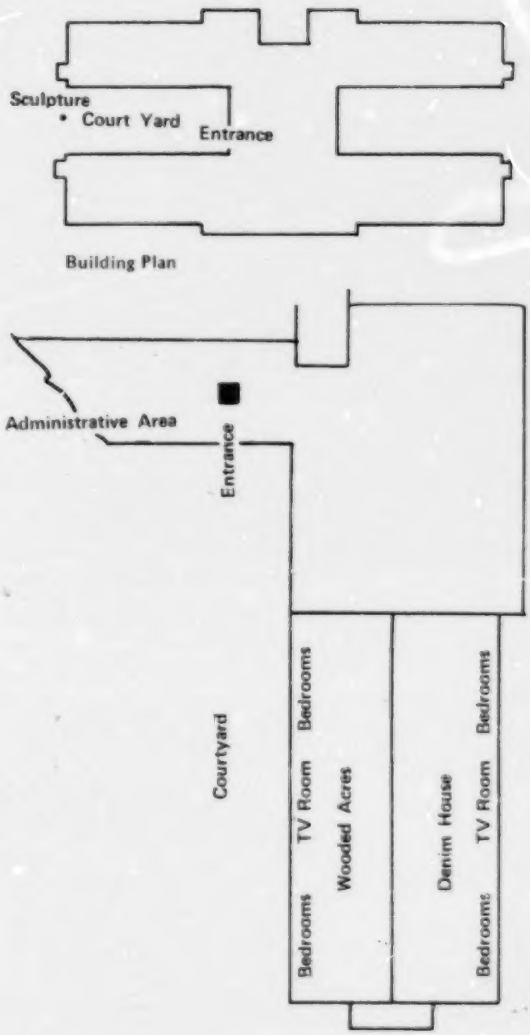
The Children's Center was designed to be, first of all, a place for children. This special setting for emotionally disabled children is located on the grounds of the largest mental hospital in the Commonwealth of Pennsylvania. The children receive not only shelter, food, and psychiatric treatment, but also find a place that is warm, accepting, stimulating, and meaningful.

During a child's formative years he identifies with his environment, and that environment becomes a part of his psychological structure. His living environment must provide satisfaction of basic physical and emotional needs, as well as opportunities to learn to care for one's self and possessions in a nonthreatening climate. We feel the Children's Center is such a place.

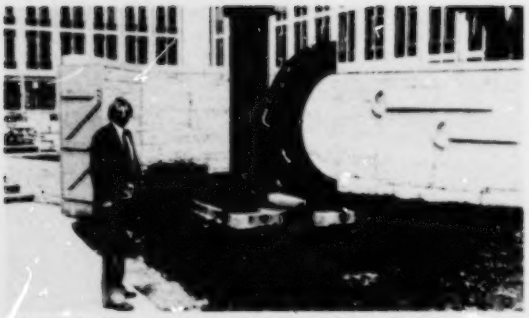
Hospital environments are generally foreign and disorienting to children. Through the use of arches, beams, colorful paint, patterned and solid carpeting, and alcoves with padded benches, the hospital can become an appealing living area which invites interaction and activity.

The Children's Center is fashioned on a small village theme which emphasizes boundaries, transition, easy identification, and functional categories. The Center, which is discreetly bounded from the large hospital building, is a U-shaped facility with areas easily identified as downtown, neighborhoods, houses and courtyard. The village theme provides a framework for the overall organization of space into meaningful, functional units with appropriate transitions and levels of privacy. It is designed to assist children in relating to both the private and public areas of their environment as it enhances their personality growth.

Alan A. Axelson, M.D.: Director, Children's Psychiatric Treatment Center; John J. Sliman, M.S.W.: Administrator, Children's Psychiatric Treatment Center, Mayview State Hospital, Bridgeville, Pennsylvania.



The downtown area, which includes the main entrance to the entrance to the Center, contains the administrative offices, a village sign post, and the candy store. This is where decisions are made and communications involving the entire community are focused. Children, parents, and visitors enter here and are quickly welcomed and introduced to the surroundings.



Alan A. Axelson, Director at Entrance to the Center

Kiosk

Kiosk and Candy Store: The kiosk and candy store are part of the downtown area. This kiosk, like all others, states directions on how to locate other neighborhoods (the Denim Dug Out and Wooded Acres) and other announcements of interests. The candy store is operated by the children.

The neighborhood areas contain workshop and laundry rooms, space for recreational activities, a library, and offices and therapy rooms for clinical staff. There are also two neighborhood classrooms which are available for those children who require an educational setting closely related to their living area. Other children more capable of independent behavior attend the cottage school which is within walking distance from the Center.

The more private living areas are designated as houses, with each house containing a living room, dining room, kitchen, television lounge, carpeted hallways, and single and double bedrooms for 10 or 11 children. The bedrooms, which meet medical assistance standards of 100 square feet for individual bedrooms, and 160 square feet for double bedrooms, have been altered in scale by painting the ceiling and the upper 18 inches of the walls with a dark accent color to give the illusion of a lowered ceiling. This same method is carried through for window cornices which blend the ceiling line across the much higher windows. The cornices provide a secondary benefit by permitting the use of standard 63-inch draperies attached by pinch rings to a sturdy drapery rod made from ½-inch electrical conduit. Thus, when a child becomes destructive and pulls down the draperies, he is not hurt nor is the rod damaged, and the fabric can be easily rehung, often by the child himself.

The small kitchen which is a part of each house is available for staff and children to prepare a late breakfast on weekends or brownies and pizza for evening snacks. The carpeted hallways, which are more like a living room and easy to maintain, often invite gatherings and interaction among the staff and children. Each child has a sense of personal space in his house. He can keep his personal treasures in his bedroom and decorate it as he wishes.

Transition from the neighborhood areas to the houses is made through an entrance door and porch area. Each of these entrance areas has its own individual identification through color, texture of brick and plaster, and carpet pattern so there is no confusion as to which house you are about to enter. The identifying color theme throughout each house served as an incentive for the name chosen by the children for their particular house. "Denim House" has blue/green carpeting with blue accent paint, while "Wooded Acres" has brown/orange carpeting with green accent paint. The carpeting absorbs sound and softens the effect of the environment; the arches, alcoves, and accent colors provide visual stimulation by blending the design and making it appear homelike.

The courtyard, enclosed within the outside

boundaries of the downtown area and the houses, offers space for many recreational activities one might find in a neighborhood backyard. Here the children enjoy sandbox and water play, bicycle riding, basketball and racquet games, and frequent outdoor meals served on the picnic tables. Also, adjoining the courtyard is a fenced playground area where a swing set, sliding board, and climbing bars are situated on a half acre of grass.

The children have been residing in their new home for almost a year. There are some chips in the paint, gouges in the plaster, and some scribblings on the walls; but the design works. The houses have developed their own uniqueness and facilitate the formation of family groups. Both the children and the staff are shielded from the immensity and complexity of the of the rest of the institution, and the staff is secure as the children move freely in their house, the neighborhood, the downtown area, and the courtyard.

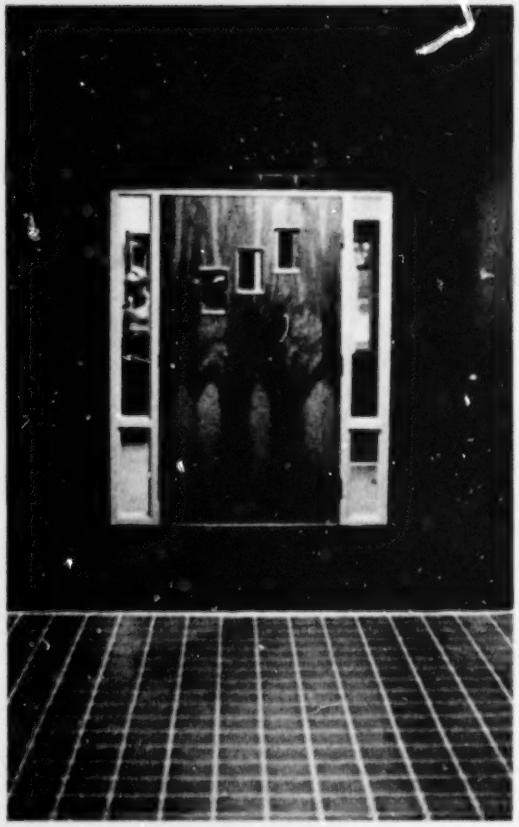
We feel our psychiatric program has been complemented by this environment through all the benefits it offers to our patients. Its architecture has become a sculpture which symbolizes and embodies the spirit of the people who work and live here. It has contributed to their sustenance, and particularly with respect to the children, it has assisted us in molding and facilitating each child's growth as a person.

TV Room: The TV room is an integral part of the program in that only children who have appropriate social behaviors are permitted the privilege of watching TV. The TV room is designed like an amphitheater to accommodate many people viewing one TV screen. This design also promotes "interaction" among those in the room; there is no place for a child to take a "back seat."

Archway: The archway provides a break to a long, mundane corridor and at the same time conforms to building codes.

Denim Dug Out and Wooded Acres: These are the entrances to the various neighborhoods. The home-like doors (versus institutional doors), the carpeted porch, and bench further develop a home-like quality. The porch area is another one of many meeting areas.

Robert J. Moro, Director of Design, Mihai Marcu, Director-In-Charge of Design; IKM Partnership.

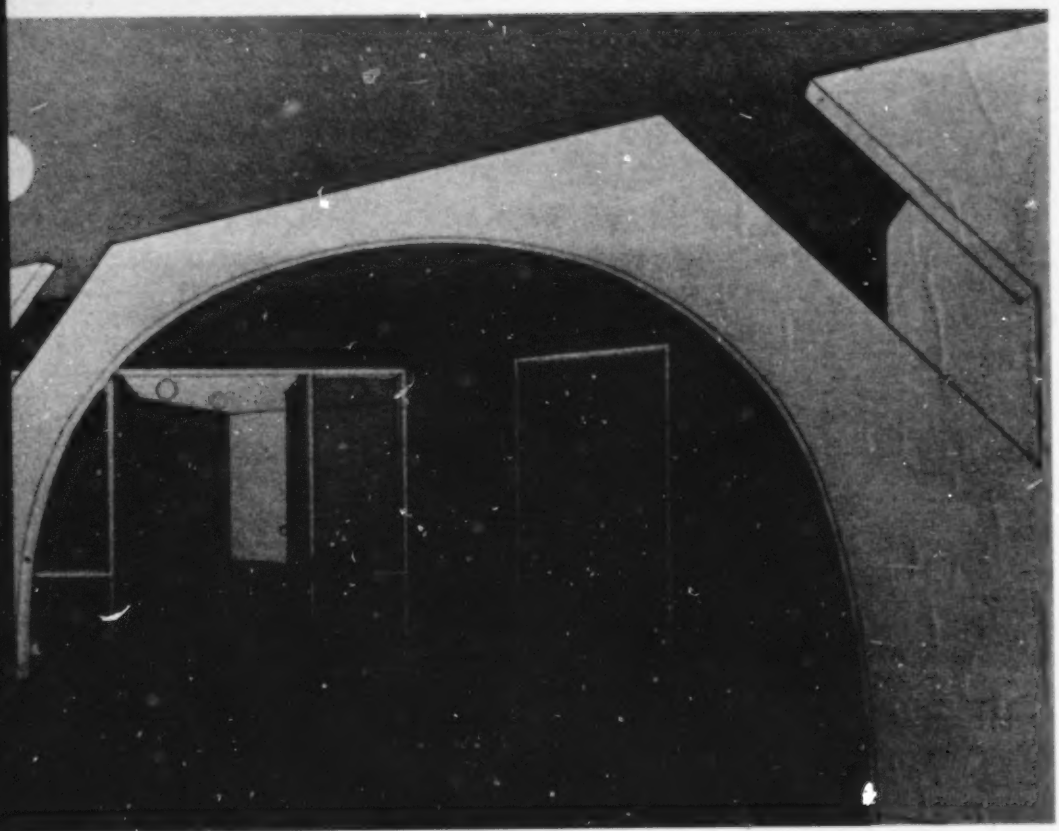


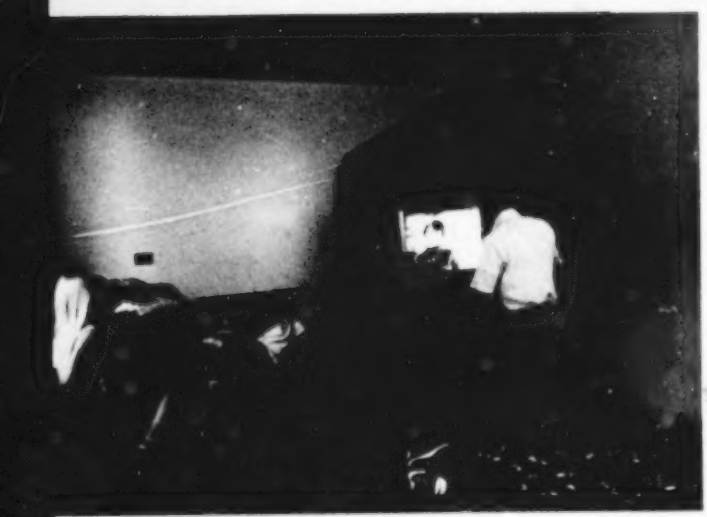
Denim Dug Out

Archway

Wooded Acres

TV Room





House of Mirrors: This is a wall design strategically placed so that when a child is walking through a corridor and views him/herself in this mirrored house, it further establishes an identity of living in a house and not in an institution. It is also a reminder of a house that may be seen in any downtown area. Standard building material and local talent were used to make the house.

House of Mirrors

Jousting With Bureaucratic Windmills 11

ALAN A. AXELSON, JOHN J. SLIMAN

"If you can't get rid of
the family skeleton, you
may as well make it dance."
— George Bernard Shaw

For institutions to implement environmental changes, the process can be laborious and lengthy, but the time and efforts involved in this process can be reduced if specific approaches are instituted. The process and procedures utilized to bring about innovative changes at the Children's Psychiatric Treatment Center are documented to illustrate how the process can be managed to effect and attain desired goals within a reasonable amount of time.

The Children's Psychiatric Treatment Center has been operating at Mayview State Hospital since August, 1976. Prior to that time, the Center was based at a nearby state facility for the mentally retarded. Although the facilities at our former location were constructed less than 15 years ago and represented the best in mental hospital architecture, they communicated coldness; glazed tile hallways faded into a series of doorways and steel shrouded windows with heavy screens and isolated children from the green grass five stories below.

Our experience in working with emotionally disabled children in this type of austere atmosphere helped us to realize how a physical environment can seriously hamper a psychiatric treatment program. We were determined to find an environment which would be stimulating, warm, and conducive to the nurturing of children, an environment which would actually be an intrinsic part of the treatment program. Our experienc demonstrated to us that the physical and psychological structure of environments are closely interwoven. We had confidence that our program would provide a corrective psychological atmosphere, but we also had to have a physical setting which was accepting and warm to children. Fortunately, our regional administrators concurred with our thinking and together we spent approximately two struggling years establishing what we feel is now one of the best architecturally and programmatically designed child facilities in the Commonwealth of Pennsylvania.

It is advisable that the actual recommendation for a relocation of this magnitude come from outside the system. For this reason a task force of experts composed of four child psychiatrists associated with the University of Pittsburgh were given the task of evaluating the program and making recommendations. The use of a consulting group whose personal interests are not invested in the outcome is an effective means of dealing with sensitive and difficult decisions. Not only is their expertise and experience valuable in determining recommendations, but the administrative person is permitted latitude in exercising many options. If the recommendations are contrary to one's desires and wishes, or if they overlook some of the political and administrative realities the report can always be buried in the back drawer and ignored. However, if by chance the consultants make recommendations which meet one's preconceived notions or show true genius in bringing forth innovative ideas, the report can be extremely useful and can provide the theoretical and practical external rationale for one's course of action. Furthermore, the administrator who follows the recommendations of a consultant's report does not have to take responsibility for parts of the report which may be contrary to certain vested interests.

Alan A. Axelson, M.D.: Director, Children's Psychiatric Treatment Center; John J. Sliman, M.S.W.: Administrator, Children's Psychiatric Treatment Center, Mayview State Hospital, Bridgeville, Pennsylvania.

We can say with some assurance that, although children may be the victims of fate, they will not be the victims of our neglect.

–J.F.K.
10/24/63

After several months of evaluation the task force submitted a report which contained a recommendation for the Center to be relocated to a selected facility at Mayview State Hospital which could be structurally modified to complement the program needs of emotionally disabled children. We accepted this recommendation with full knowledge that implementation would require a major effort.

The task force report, once accepted, had to go through a process of approval which was time consuming but necessary. During this time we met strong opposition from advocate groups involved in mental health and children's services concerning the proposed relocation. This opposition was at least in part due to the fact that placing children in large institutional settings was counter to the trends in community treatment of psychiatric patients. We met with these advocate groups and dealt directly and forthrightly with their concerns. Because there was no practical alternative to the proposed relocation, we were successful in redirecting their energy toward helping us to develop a positive environment for children in the psychiatric hospital. The needs of these special children became a focal point of our dialogue, and after four months, a commitment was hammered out to develop the best possible environment for treating emotionally distrubed children within the confines of of the state hospital system. This commitment, which was the result of our catalytic efforts with support from our regional administrators and the administration of Mayview State Hospital, was accepted not only by the mental health and child advocacy groups, but also by parents' groups and concerned departments of the University of Pittsburgh. Essentially the following points were committed to writing: (a) The needs of emotionally disturbed children would be a priority focus in the development of the Children s Psychiatric Treatment Center at Mayview State Hospital, (b) The Center would be a semi-autonomous unit at the hospital with special administrative authority and budgetry allowances, (c) A Citizen's Ad Hoc Coalition would monitor the Center's progress and provide input into the relocation projects, (d) Consulting design architects with experience in designing environments for children would be utilized for the project, (e) Finally, an advisory committee would be appointed by the regional office to assist the Center in its development once relocation had occurred.

Agreements in principle have a way of becoming arguments and impossibilities in implementation. We learned this soon enough as we became immersed in the regulations concerning budget cycles, purchase requests, life safety codes, medical assistance, and the Joint Commission on Accreditation of Hospitals. Some regulations, even though counterproductive, had to be followed. For instance, we found that to meet life safety standards we had to follow the 1967 fire code. This code is more rigid than the later 1973 fire code which takes into account the special needs of health care facilities, but state regulations currently authorize the 1967 fire code even though the 1973 fire code is more reasonable and appropriate.

In our travels through the maze of bureaucratic systems we found two stock responses: "It's against regulations" and "Well, it can be done, but it will take some time." We wondered if it was some sort of system-bred paranoia, or do bureaucrats actually enjoy telling you how cumbersome, unresponsive, and overregulated the systems have become? We had two choices: We could toss in the towel as a result of our frustrations in dealing with systems we did not understand, or we could learn as much as we could about technical bureaucratic regulations and procedures and make them work for us, not against us. We chose the latter and used a structured general systems approach paying particular attention to the interactional group processes involved in every aspect of the project. It became evident to us that the shortest distance (time) from Point A to Point B (task/goal) was not always via a straight line (regulations/procedures) because sometimes the line was not long enough. Occasionally, one has to go a longer distance by bending

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If we had paid no more attention to plants than we have to our children, we would now be living in a jungle of weeds.

—Luther Burbank

(Continued on page 37)

Sand Table Detour

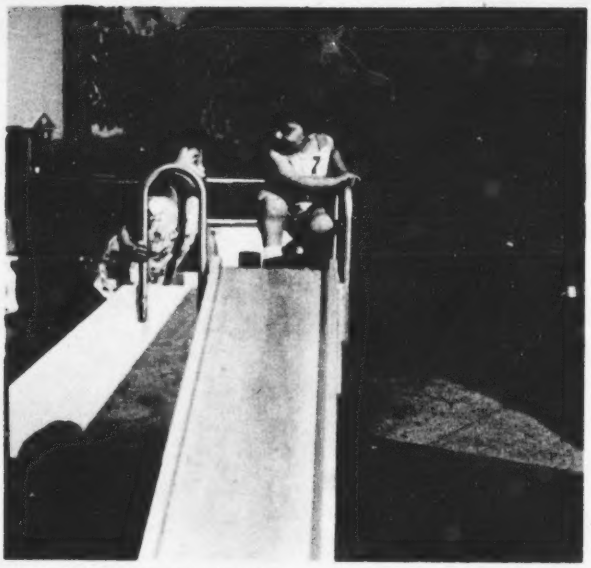
Toy Lending Library 12

ELIZABETH and BRUCE GOLDSTEIN

The Pittsburgh Toy Lending Library, started in 1974 by a group of people from the community, is a non-profit, tax exempt organization governed and staffed by volunteers from its membership. A $5 annual membership fee entitles a family to come and play together and to take out toys for a two-week period. The library environment, designed by the library's governing board with consulting help from Joanne and Richard Pohlman, Ruth Rosenfeld, and Pat Lawson is one in which a large number of children (birth-K) and parents can play at the same time without being crowded and one in which parents can easily see their children at all times. The color scheme for the entire library is subdued by muted colors which keep the environment

(Continued on page 44)

Bruce and Elizabeth Goldstein, Directors: Pittsburgh Toy Lending Library, Pittsburgh, Pennsylvania.

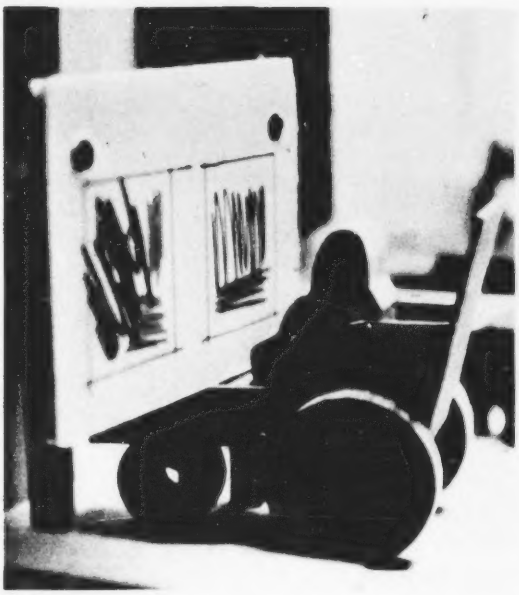


View of Stage from Infant Area

The Crossroads (Carpeted Stage)

Secluded Infant Area

I.V. Unit



Cart

Division 27 Playroom, Children's Hospital Medical Center, Boston, Massachusetts – the Playroom for the General Medical Division, Ages Infant through Six Years of Age. Designed by Other Ways for Education and Environmental Development, Fall 1975.

I.V. Unit This depicts a wooden deck or platform which was built in order to limit and define the arts and crafts area within the playroom. The surface of the deck lifts up to reveal a storage space in which several foam mats can be placed to be made accessible for parent sleep purposes during night time hours. The deck itself can then become a sleeping platform by the removal of the yellow table and stools depicted in the slide upon it. The deck is 4 feet by 6 feet in size and adequate to provide craft experiences for two to six children. The children may sit or kneel on the deck surface and work at the yellow table, or sit on the stools as shown here, or work directly on the deck surface without use of the yellow table. In addition, children

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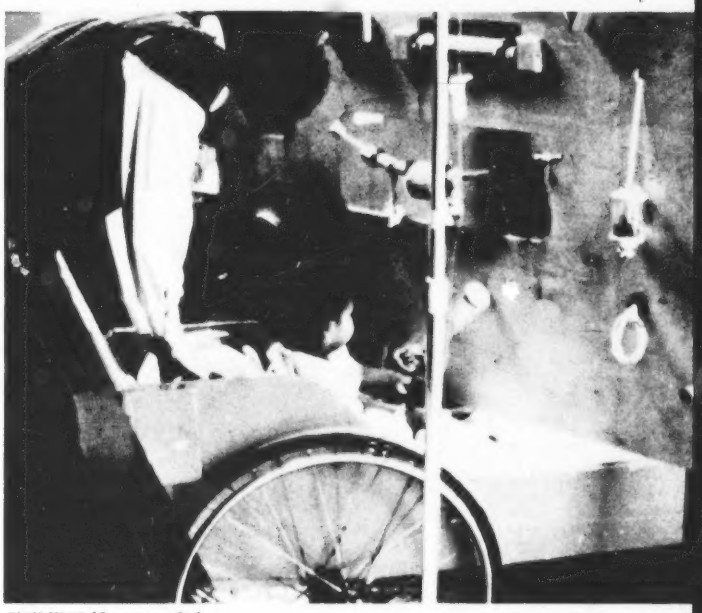
Designer: Anita Olds

Contributors: Fred Todd
Henry Olds
Walter Drew
Don Kline
Carol Baldassari

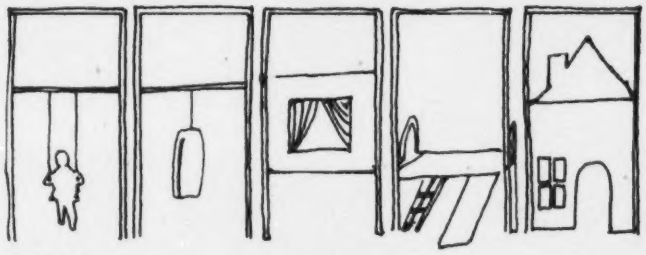
13
The Children's Hospital Medical Center



Skill Wall (See page 26)

may sit at the edge of the deck and have brought up to the perimeter other tables at which they may work. A child on an I.V. is able to bring his pole up along-side the deck and still work comfortably upon it.

Playframe The playframe is a concept developed by Fred Todd as a means of providing a variety of experiences within a small amount of space. It consists of four vertical uprights across which can be suspended a variety of props, or panels, such as an easel, a house-front, a busy board, a punching bag, a jolly jumper, etc. The upper area of the frame has been designed to store the play panels. Panels can be mounted at a variety of heights to accommodate children who are standing or those seated in chairs, go-carts, or wheel chairs.



Playframe

Cart This shows a model done of the room before it was constructed, in which the easel play panel for the playframe has been mounted at a height which will make the surface accessible to a child in a go-cart. The go-cart itself, here depicted in schematic form, is a wooden device originally designed and built at Children's Hospital Medical Center, Boston, for the transport of children who can be seated but must have their legs stretched out in front of them. The cart is presently manufactured commercially and purchased by Children's Hospital for its use. Several other hospitals throughout the country also use them.

Houseframe This shows the first prototype of the playframe in use. The housefront panel has been mounted across the two front posts. The playframe here provides an interior space 4 feet by 3 feet in size. The upper front portion of the frame is covered by a sheet of homosote to provide a tack surface for children's art work or other displays. Systems for mounting the panels without the use of loose pegs and for perfecting the storage and dimensional aspects of the frame have been much refined since production of this prototype.

Houseframe

Skill Wall Depicted here is the first version of a giant busy board mounted at a level whereby a child in a go-cart can utilize items on the busy board. Most of the materials on the busy board are common household and houseware items or were made by the use of scrounge and inexpensive materials. This busy board did not hold up well under intensive, institutional use; that is, many of the items fell off of it or fell apart. The design of new busy boards has been perfected this year in Washington with the incorporation of sturdier, commercially produced playthings.

(Continued on page 42)

14 The Children's Museum of Boston

Presently, The Children's Museum of Boston occupies a complex of houses and buildings in the southwest section of the city.

In 1966, after the beginning of a series of extensive program changes initiated by Michael Spock, Director of the Museum, Cambridge Seven Associates remodeled a former auditorium to serve as a "Visitors' Center."

The Visitor's Center was required to be a large and adaptable exhibition space that would respond to the museum's dynamic educational program. It needed to serve large groups of children coming from school, as well as individual children coming with their parents. It also was to serve, in some respects, as a community facility for the surrounding neighborhood.

To provide reasonable circulation control, maximum use of volume, and a variety of exhibit spaces for flexibility and change, a system was developed of open gallery spaces occurring on several levels, connected by stairs and ramps.

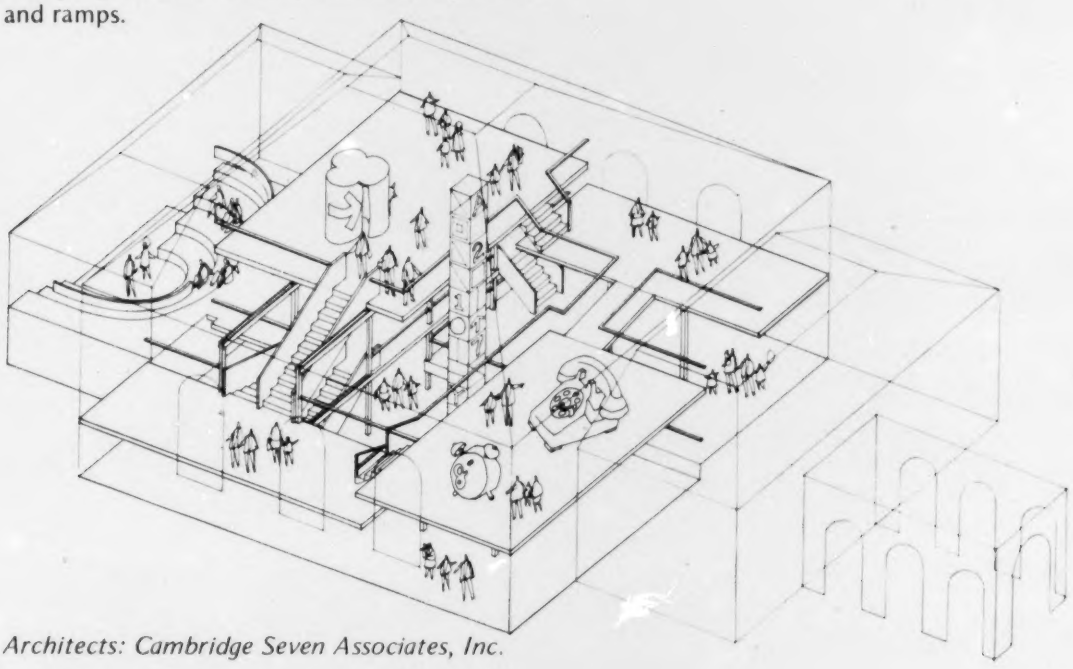
To reinforce the lively character and educational content of the exhibit, a visually self-explanatory structural system was designed using simple bolted beam-to-column connections; joists resting on beams of wood members were left exposed so that the structure would be an exhibit in itself.

The existing stage area was converted into a small semi-circular "sit-around," used for demonstrations to school groups of up to 60 children.

In the near future The Children's Museum and the Museum of Transportation will be jointly housed in an old warehouse in a downtown area that was once the wool brokerage capital of the world and is now the Congress Street Wharf. This is a choice site as it offers convenient access to local transportation systems, convenient parking facilities at the Atlas Terminal Stores Company's warehouse which is in remarkable repair, and a wide apron along the water's edge which will accommodate outdoor exhibits, activities, and future growth and will link the wharf to the waterfront.

Architecturally, the wharf will be divided into right and left halves with a central shared core, including a loading dock, maintenance shop, public lobby, library/resource center,

(Continued on page 39)



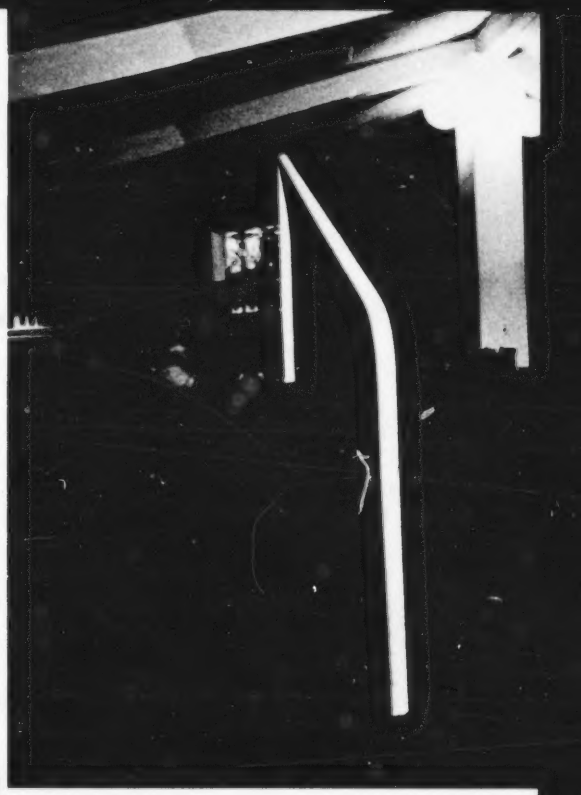
Architects: Cambridge Seven Associates, Inc.

Fish Tank

The Fight For Sight Children's Eye Clinic

Clinic Director: David A. Hiles.

15



Play Area

The children's waiting area in the Department of Opthalmology at Falk Clinic is a very special place designed to provide children with a stimulating play space during lenghtly eye examination procedures. A stringent budget, short project scheduling time, and limited floor area required innovative use of the existing space and materials. The gabled attic space was used to advantage in relocating suspended piping below built-in plywood wall seating. The seating was then covered with carpet and the exposed concrete ceiling painted. The main waiting play area for children was built on an existing raised platform that had limited usage for adults because of low headroom. Simple geometric forms were built of plywood and covered with brightly colored carpet to shape a central high back seating area for adults. Crawl-thru nooks and crannies with surprise mirrors in niches, toy shelves, and an aquarium in the surrounding low sloped ceiling area were constructed as high-interest spaces for the children. For more active play, a small slide was provided adjacent to wide, carpeted steps.

Fish Tank: The fish tank, in the play area, was specifically placed in the wall-like, high-back seating area facing the top of the stairs to attract children to come into the area to play, to discover, and to have fun. The fish tank is child-safe as it is custom-built into the wall unit.

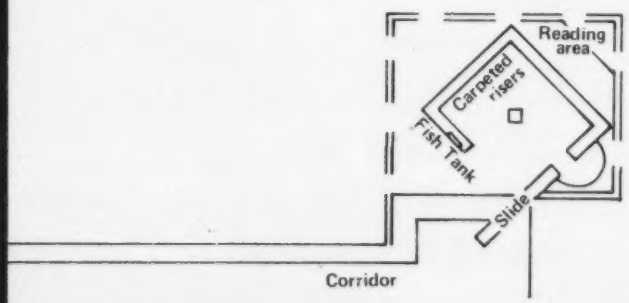
Robert J. Moro, Director of Design: Mihai Marcu, Director-In-Charge of Design; IKM Partnership.

Play Area: The architects viewed this area as having a "tree-house" effect in that one climbs stairs to be in the area; once in the area, the design itself motivates children to crawl, creep, and climb upwards and downwards on the many carpeted tiers. While the children move around in the area, they also discover toy corners, mirrors of varying contours, heights, and shapes (not seen in the photograph, but located behind the high-backed seating areas), a reading area, and the slide. The low-beam ceiling prohibits parents from entering the area, which the children enjoy. Children can be observed at play, however, looking over/behind the seating area. Most of the area is carpeted and requires minimal maintenance.

Slide

Quiet Reading Cor

Reading Area: In the far corner of the play area is the "Blue Carpeted Triangle" which is designated as the reading area. It is removed from the active play areas to give the feeling of privacy, but because a child can still view others playing, he/she doesn't feel isolated.



16 Western Psychiatric Institute and Clinic

CHILD TREATMENT & EDUCATIONAL FACILITY – JOHN MERCK PROGRAM

ROBERT J. MORO

The interiors of the John Merck Unit at WPIC are a departure from the harsh institutional environments prevalent in similar facilities. A therapeutic environment for the care of retarded and disturbed children was created by using warm colors, graphics, and a variety of textures. Within this therapeutic setting are special features such as the rainbow archway which is used for crawling through to special niches, plastic child-shaped mirrors on the wall, stuffed fabric educational materials which can be thrown on a velcro wall and child-sized furniture.

John Merck Unit

Robert J. Moro, Director of Design, Mihai Marcu, Director-In-Charge of Design; IKM Partnership.

Professional Literature in Environmental Design 17

KAREN VANDERVEN

Introduction

Often without knowing it, teachers who have been careful not to have the block corner next to the quiet reading area or child care workers who have arranged chairs so that withdrawn children might more readily see each other have been practicing environmental design. Today, however, workers with children can expand their intuitive efforts through utilization of rapidly expanding theoretical and applied literature on the effects of environmental variables on human behavior. While much of this literature is based in fields other than child development or covers age groups other than childhood, the reader who is willing to perform the task of integration will find concepts that can readily be adapted to the task of arranging environments which can best meet the various needs of young children in different settings.

Historical Origins and Theoretical Background of Environmental Design

Since the sources of environmental design literature are diverse, particularly useful are general descriptions which indicate what environmental design is, how it evolved, and how it can be utilized in improving human services.

An excellent introduction to the diverse roots of today's interest in environmental design is "Conceptualizations of Human Environments" by Rudolf Moos in *The Human Context* (1976). Seven trends which have contributed to the development of the field, such as the rise of advanced civilizations and modern organizations, architecture, and the ecology movement, are identified and described. These trends are then integrated into a social ecological perspective which Moos suggests can provide "a distinctive 'point of entry' by which human environments and their impacts on human functioning can be studied" (p.32).

Robert Sommer, in *Tight Spaces* (1974), offers a research-based, illustrated overview on the impact of different kinds of architecture on behavior, stressing the dehumanizing potential of "hard" architecture which is strong and unadaptable to human influence.

The study of the relationship of children's behavior to environmental determinants has been pioneered by ecological researchers Roger Barker and Herbert Wright. Their work is described in such books as *One Boys Day* (1951) and *Midwest and Its Children* (1955) and has set the trend for continued application of ecological concepts to understanding and working with children.

A comprehensive, contemporary description of the contributions of ecological psychology to environmental design is provided by Paul Gump's *Ecological Psychology and Children* (1975); the highlight of the book is the compelling consideration of the effects on children of various types of environments such as housing, preschools, and public schools. Readers will be provoked to wonder why so little may actually have been done to apply these research findings and concepts of the environment in program planning, since it is amply demonstrated that furniture arrangements, color, noise level, and numerous other environmental factors are as important as the content of the curriculum in developing effective child-centered program sites.

Designing Treatment Environments

The otherwise comprehensive Gump book does not encompass the design of treatment settings. This is important, however, since while this is not only an area in which there is a great need for environmental influences to be taken into consideration but also one which has a strongly developed research and theoretical base. Historically, environment factors in designing treatment settings can be traced even as far back as the 1880's with the work of Kirkbride, described in his *On the*

Karen VanderVen, Ph.D. : Associate Professor of Child Development and Child Care, School of Health Related Professions, University of Pittsburgh, Pittsburgh, Pennsylvania.

Construction, Organization and General Arrangement of Hospitals for the Insane, a work which is still cited and is highly regarded for its humane principles. While the advent of individual psychotherapy caused some diminishment of the study of milieu factors in treating the adult mentally ill, the last three decades have seen a rapid upsurge in literature on the therapeutic milieu-environmental aspects including physical, organizational and interpersonal factors which make a humane, rehabilitative setting. A number of comprehensive and detailed works are available, including *Social Systems Perspectives in Residential Institutions* (1970), edited by Polsky, Claster and Goldberg, *The Therapeutic Milieu* (1973), edited by Rossi and Filstead, and *The Patient and the Mental Hospital* (1958), edited by Greenblatt, Levinson and Williams. Especially recommended for the strength of its theoretical rationale, the directness of its practical suggestions, and for its relevance to work with children is *Ego and Milieu* (1962) by John and Elaine Cumming.

A more recent landmark in approaches to therapeutic milieu design is *Normalization* (1972) growing out of the author, Wolf Wolfensberger's work in mental retardation. Stunningly describing how conceptions of the meaning of deviancy have contributed to "treatment" settings which are isolationist, dehumanizing and certainly non-rehabilitative, Wolfensberger proposes utilization of the principle of normalization, the "utilization of means which are as culturally normative as possible, in order to establish and/or maintain personal behaviors and characteristics which are as culturally normative as possible" (p. 28) as a counterforce. Implications of the normalization principle for architectural design of human service settings are discussed, showing how every physical aspect from the location of a building to the type of furniture utilized can be either normal or dehumanizing. For example, heavy furniture, indestructible flooring and wall material, locked areas, and similar constructions are cited as among those which reinforce a subhuman identity.

Development of literature specifically aimed at therapeutic milieu design for atypical children has been more recent and still less prolific than that related to adult care. The growing professionalization of the field of child care, stressing the role of the child care worker in the milieu in making the child's around-the-clock living experience therapeutic, has, however, been accompanied by a number of books on child care which include coverage of environmental design. These include *The Other 23 Hours* (1969) by Trieschman, Whittaker and Brendtro, *Child Care Work With Emotionally Disturbed Children* (1972) by Foster, VanderVen, Carbonara, Kroner and Cohen and the classics *The Aggressive Child* (1957) by Redl and Wineman and *Love is Not Enough* (1948) by Bruno Bettelheim. *A Home for the Heart* (1974), also by Bettelheim, is particularly recommended as the most recent, book length work which focuses directly on environmental design for therapeutic residential treatment of children and integrates some of the knowledge derived from study of adult settings into its discussions.

Designing Early Childhood Environments

The most specific and practical ideas for applied environmental design are to be found in the professional literature on early childhood education with coverage ranging from room arrangements and toy storage to playground construction. Generally, this literature is less theoretical than that on environmental design for other populations; however, sound background is provided in articles such as Swap's (1974), which reflects an ecological frame of reference, and *Early Childhood: The New Perspectives* (1968) edited by Laura Dittmann. This book is sophisticated and detailed theoretically, linking its discussion of environmental design with specific developmental needs and tasks of children at different ages and specifically attempting to "identify what is known about young children and apply it to the day by day programming – or 'engineering' as Gewirtz [one of the included authors] puts it – of the lives of children" (p. 2).

Explicit guidelines in physical space design of room arrangement in preschools are provided by Kritchevsky, Prescott and Walling's *Planning Environments for Young Children* (1968). This monograph, as the authors state, is concerned with the fact that "particular

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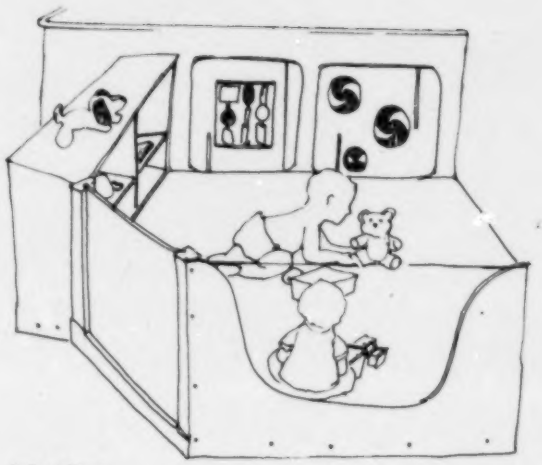
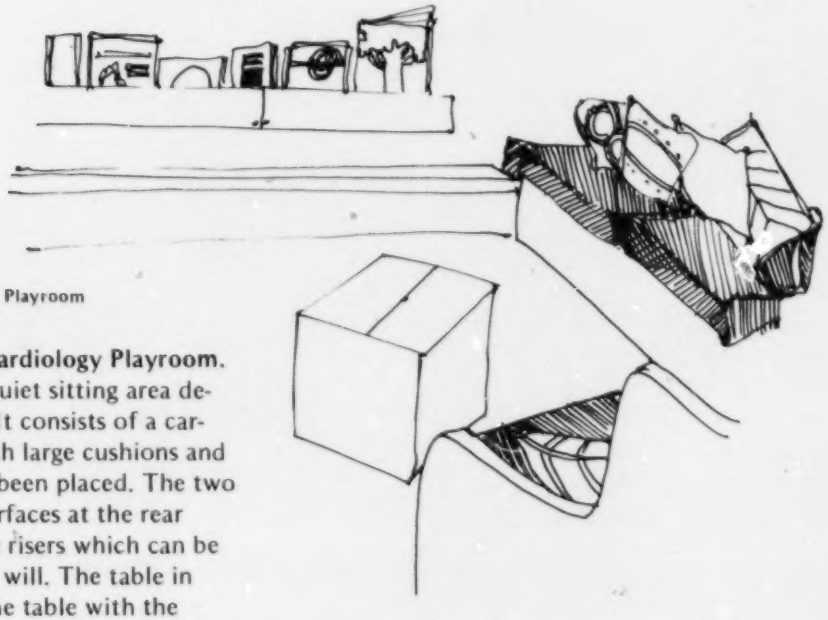
(Continued from page 9)

children who eat together in this playroom. The chairs and stools are made from International Paper Company tubes cut to desired heights and shapes and painted and decorated fancifully. The unit behind the tables is an art storage unit designed to hold miscellaneous materials and to store colored paper vertically so that the selection is visible and the choice of one piece of paper does not pull the whole ream with it. The tables are built of finished birch plywood and have their corners cut off in order to reduce the number of pointed and sharp edges in the room.

Infant Deck This deck consists of a 4 inch high carpeted platform on which adults and children can sit and play using the materials stored on the shelves on the left. The thin panel visible to the right of the storage shelves can be lifted up and removed from its resting place, thereby making an entry-way onto the platform. The panel would be put down only in those instances when one wished to contain and confine an infant to the space, thereby transforming it into a modified but much expanded playpen.



Infant Deck



Banquette Quiet Area, Cardiology Playroom

Banquette Quiet Area, Cardiology Playroom. This is a close-up of the quiet sitting area depicted on the floor plan. It consists of a carpeted platform onto which large cushions and small throw pillows have been placed. The two carpeted, uncushioned surfaces at the rear and left of the picture are risers which can be removed and relocated at will. The table in the middle is the flap game table with the flaps in place. *(Continued on page 40)*

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Each of these dimensions and any which appeal to the designers and users of the space, if varied in moderation, can help reduce the bland feeling of institutional settings and introduce the moderate levels of sensory stimulation necessary for maintaining optimal degrees of responsivity. A child who is comfortable in a space will "lose" himself in it, not by being confused and disoriented, but by feeling safe from attack or intrusion and unself-conscious about his performance. Such conditions foster playful attitudes towards materials and events which enable the child to be fully engrossed in the important tasks of developing and learning.

The variety of materials, their accessibility, their storage and display in varied activity areas, the organization of those areas within the entire classroom space, and variations in the sensory quality of physical spaces all constitute the curriculum of the school. Teachers have not only the right but also the obligation to structure the total educational setting in the same way that they have the right and obligation to select the best books or construction toys for meeting the growing child's needs. To ignore the context for learning and doing by focusing primarily on the behaviors and the materials in it is to evade the substantive influence of environmental design on development.

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in the clinical area which strongly suggests that the concept of cottage-based, homelike living and care is to be preferred to a larger clinical facility.

The children's psychiatric treatment center at Mayview State Mental Hospital incorporates the cottage concept into a larger three-story building, originally designed for more traditional care of adult patients. Here, a very innovative approach to interior design and decor has resulted in a very realistic cottage atmosphere. For example, the materials used for furnishing and accessorizing were purchased from community department stores rather than from the usual state hospital suppliers, and the interior structural design of entry ways, doorways, and other rooms such as kitchens and dining rooms is similar to the interior structure of an average home. Likewise, the life style is similar to that found in the average home in that children have easy access to the kitchen and dining room.

The main thing lacking in the Mayview setting is the appearance of the external part of the facility, which continues to resemble a larger commercial building. Nevertheless, a playground has been corporated which is similar to a school play yard.

The private Camphill School in rural Chester County, Pennsylvania, constructed on the European Steinder Concept, is one of the most innovative to be found for the residential care of children. In a countryside setting, the architect has erected a number of Swiss chalets. The exteriors are colorful and differ from one

another in design. The interiors are, for the most part, solid wood with built-in tables, chairs, and beds. The strong emphasis is on family living in an environment where wood and color are combined to soften the impact on the disturbed child.

This setting comes closest to the children's village concept currently used in the residential treatment centers in many European countries, but not yet adopted in the United States.

What is the importance of a specifically designed environment in the treatment of mentally ill children? From a psychologic standpoint, severely emotionally disturbed children, especially those suffering from childhood schizophrenia and other psychoses, are acutely sensitive to all sensory stimuli. As a consequence, the perceptions presented by the environment are extremely crucial to their well-being and therapeutic improvement.

For example, colors that are too loud, materials that are too harsh, such as glazed brick, living spaces that are too confusing in their arrangement, all impact negatively on such children. The most therapeutic environments, then, are those which produce the opposite effect by careful cooperation between architect and therapist.

Another characteristic of mentally ill children which must be taken into consideration is their extreme destructiveness. Such children have been known to reduce therapeutic living environments to chaos by removal of doorknobs, window latches, electrical plates, as well as larger pieces such as tables, chairs, and other equipment. This is a driven need on the part of the children and emphasizes the need for built-in furniture, recessed fixtures, and soft indestructible materials to create a "child proof" environment.

Depressed youngsters need the stimulation of a lively environment, particularly with regard to color. This must be modified to a certain degree through use of pastels, for example, so that while depression is alleviated excitement is not produced as an alternative.

Unfortunately, delinquent children may have a tendency to run away, to hide contraband materials such as weapons, or to barricade hallways and doorways; any of these tendencies may jeopardize the safety of these children. Therefore, it is necessary to maintain a closed circuit television security system for surveillance purposes. Some advocates of civil rights have objected to its use; however, this system has proven important in protecting the safety of confined children. This system is not necessary in relation to external environments such as the school grounds, the camp grounds, and wooded areas as these areas serve as psychological deterents to running away, hiding contraband, or barricading themselves into secluded areas. These natural external areas thus alleviate the need for jaillike high surrounding fences and improve the overall therapeutic environment.

Although the national and state trend in treatment is in the direction of a discontinuation of treatment residences away from home and a substitution of treatment programs serving the child who lives at home or in small group settings, it is felt by this author that there will always be a need for a certain percentage of children's treatment programs in centers away from home. For several decades the designs for these centers have been in the direction of homelike settings. This is very likely to continue, and innovative ways will continue to be sought to recreate the home atmosphere in such centers.

In conclusion, common sense tells us that if one is to develop skills in coping with one's own home, school, and community environment, therapy must be carried out in environments which closely resemble these familar settings. In so doing, one supplements psychotherapeutic treatments within surroundings that are conducive to the total therapeutic result. Such is the direction shown by the innovative architecture of mental health facilities for children in the Commonwealth of Pennsylvania.

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(Continued from page 17)

Wavy Carpet Every surface, including the floor, may be considered a potential facility for interaction and stimulation. Here, using International Paper Company tubes as the supports and curved surface, a wavy surface was produced. In addition, tubes cut to several inches in height were imbedded in an artificial floor surface to provide interesting step-in experiences. For example, one tube is lined with fake fur, one with marbles, one with sandpaper, and one with foam. A child following this adventure walk, which goes along the perimeter of the room, would enter by stepping on the wavy floor and then proceeding to explore the sensory experiences inside the tubes and/or test his balancing and straight line skills along the board to the right of the tubes.

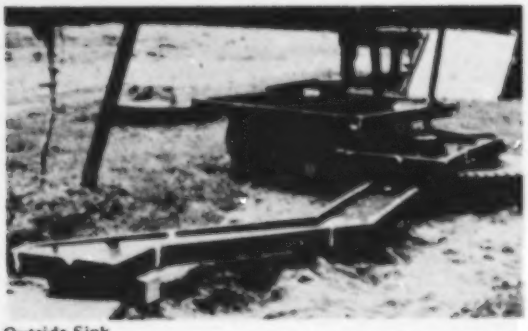
Rope Climber Depicted here is a net climber or bridge as one of a series of movement experiences in the adventure room. The room was designed to support gross motor activities on the part of children, infant through 12 years of age, and to provide challenges of many different sorts. The climber uses fishnet obtained from a marine supply company that will support the weight of a 300 pound man. It provides a unique type of crawling and support experience and is particularly useful in the integration of primary sensory motor functions.

Rope Climber

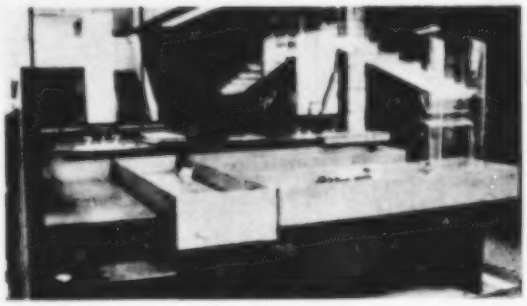
Sand Ramp Sand experiences are provided at three levels to anticipate the physical constraints and disabilities of a wide range of children. The horizontal strips to the right are not steps but cleats by which a child can pull himself up to the carpeted level in order to lie across this level to play with the sand or in order to sit in the sand at the upper height. Below this, sand at normal counter height is provided and then a sand table at floor level for small or disabled children who can best reach it from that vantage point.

Sand Ramp

Wavy Carpet



Outside Sink



Sink

Outside Tire

Each trough is completely moveable and can be relocated. The troughs can be covered when sand play is not desired, in which case, the covered surfaces can become work areas or platforms useful in a variety of ways.

Sink As in the case of sand, water troughs were built to provide water play experiences at various levels for children with differing types of disabilities. An orange platform to the right was designed to allow a child to stretch out and reach over the trough to play with water. Orange platforms on the floor at different heights lie between the three troughs. The troughs may be filled directly from a hose attached to a sink or by the plexiglass structure which allows water to flow and trickle down in interesting ways. In addition to being pretty and fun to look at, this plexiglass trough was built specifically to provide passive involvement with water for those children who could not be allowed or are not able to play with water directly. The water troughs are built of plywood and lined with fiberglass resin.

Tactile Wall

Tactile Wall It is possible to provide infants with many interesting tactile experiences simply by suspending a variety of common household and hardware items from a dowel. The dowel can be mounted in various places throughout the room, and items suspended from it can be changed and rotated at will.

Outside Tire Tire structures of many sorts were utilized as part of the outdoor play environment. Depicted here are two ways of eventually reaching a small crow's nest about 6 feet above the ground. One route is by a tire climber; the other is by a modified telephone pole structure being climbed by the boy in the shorts on the left.

Outside Sink Water play on a small scale is an important ingredient of any good playground. Here, constructed out of wood with fiberglass reinforcement, several water troughs have been arranged in such a way that a flow of water from one trough to another is possible. This arrangement allows children to play with toys in one of the troughs as well as to watch the flow of water as it moves from trough to trough. The actual means of providing a source of water and for proper drainage of disposed water had been worked out in relation to the location of the building and sloping of the surrounding terrain.

(Continued from page 23)

the line (Scrutinize the regulation for a different interpretation; Justify a regulation variance; Demonstrate that the regulation is not applicable to your situation) in order to get from Point A to Point B. You sometimes may even have to change your direction and go from Point A to Point C or D (Modify your goal). However, one should avoid at all cost modifying a goal if the modification is inferior to the original goal. Although compromise is sometimes necessary to keep a project moving, compromise will only make a good umbrella; it seldom makes a good roof.

One of the major obstacles we encountered in the relocation process was Pennsylvania's suggestion that we relocate the Center to the selected area of the hospital and submit a proposal to the legislature for renovation of the existing structure. The cost of renovating the area was in the neighborhood of $300,000, with approximately a three-year waiting period before renovation work would actually begin. This was the routine procedure for new construction and there were a multitude of regulations testifying to the process. Aside from the fact there was no guarantee the legislature would approve the proposal, we did not want to place children in a facility which was designed for adults. With the involvement of the multiple groups in the project, we were forced to search for an innovative solution to the problem. The first thing we did was to stop looking at the project as a major capital expenditure which would necessitate a three-year waiting period. Instead we viewed it as a major renovation project which could be handled by maintenance personnel at Mayview. We converted five personnel positions to temporary positions and hired skilled craftsmen to augment the maintenance staff. At the same time the regional office was able to reallocate $50,000 to purchase construction material. With this reduced budget and a maintenance staff with limited experience in construction work, the project was beginning to roll. This dilemma clearly exemplified how each system tends to look for solutions within the confines of its routine framework and often overlooks some viable alternatives.

Before actual construction began we were faced with still another problem. The architectural design of the Center was assigned to state architects, since they had experience with life safety codes and medical assistance requirements and because this was the normal procedure for any renovation work on state-owned buildings. However, although their plans revealed the utmost in efficiency in meeting codes and regulations, there was little emphasis on architectural design for the special needs of children. With strong support from the Citizen's Ad Hoc Coalition the state administration was reminded of the original commitment to design a facility which would meet the special needs of children, not just satisfy codes and requirements. The issue of a small contract for architectural design became a point of confrontation. The general principle is to avoid such confrontation where there is a clear win-lose outcome, but this was one point which could not be compromised. Rather than permitting the different systems involved to view each other as adversaries, we approached this obstacle as a problem to be solved by all parties concerned. The position we took in both this and other situations was to approach each person with the assumption that he was willing to be cooperative, but not to be defeated or even disappointed when he was not. We developed a "working with" position to find solutions, avoiding adversary positions. When we reached an impasse we used group consultation involving the state architects, the design architects, and our child advocacy group. In this problem-solving type of consultation we were able to avoid win-lose situations while accepting that perhaps things had not been appropriately or sufficiently clarified originally. As always the central motivating theme of "doing it for the children" permitted graceful compromise.

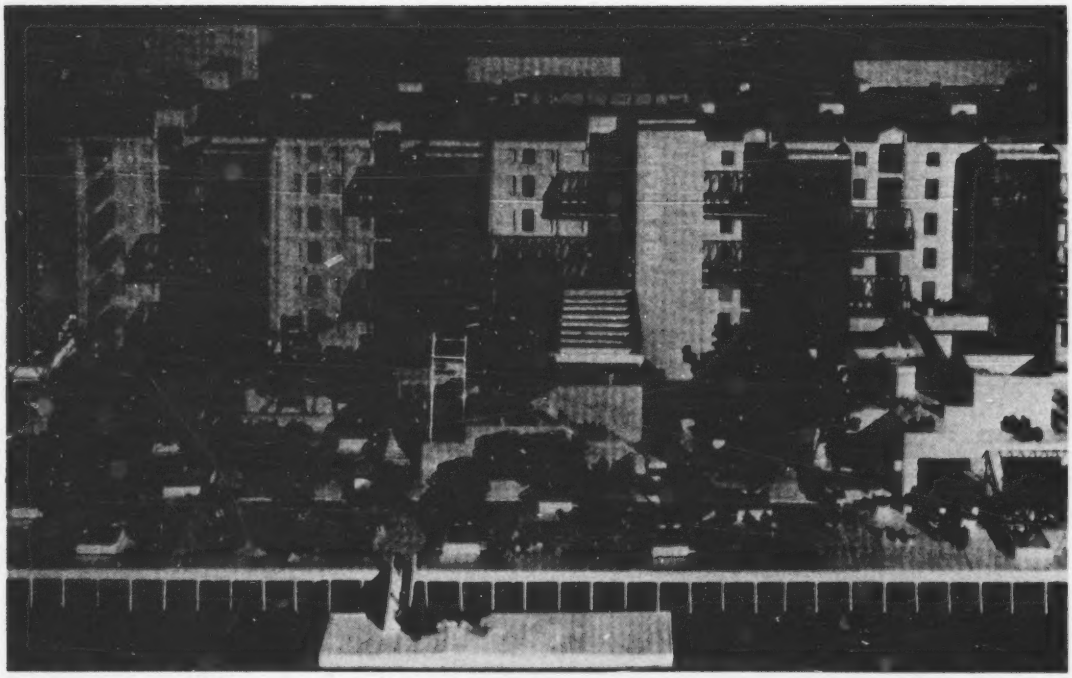
We also attempted to avoid at all cost a vindictive position of proving the other person wrong. Extra effort and frustration on one's part can always be weighed against the success in furthering the overall program goals. People involved in consultation groups should not approach each other as enemies where personal frustrations are often acted out. Rather, the atmosphere should harbor elements of a cooperative spirit with each person aware of the central motivating purpose. When someone is asked to change his mind on a particular

issue, some concession must be given for his cooperation. Accepting minor concessions gracefully is an important key to successful group consultation.

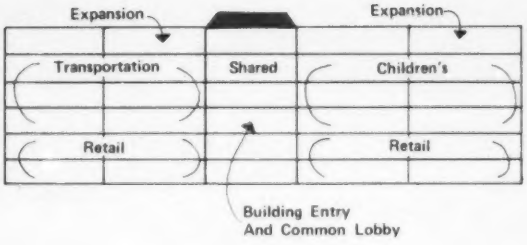
The preceding examples are only a few of the problems we encountered during the implementation process. A multitude of others ranged from state regulations which dictated the size of bedrooms doors to procedures which impeded the hiring of skilled craftsmen on a temporary basis. Throughout all of these obstacles we stood our ground and approached the regulations, and those who enforce the regulations, with optimism that solutions could be found. We took on the bureaucracy and we made it dance.

In summary, the following principles are offered to those who view the bureaucratic windmills as overwhelming:

- Utilize the testimony of expert consultants to give the added weight of authority to your proposals. Their expertise and influence can be a valuable asset to your cause.
- Seek out multiple support for your program. This support can provide you with significant leverage at critical periods.
- When confronted by opposition from outside advocate groups, deal with them directly rather than ignore their concerns. Oftentimes their energy can be redirected to focus on a central motivating purpose.
- Approach each person with the assumption that he is going to be cooperative, but do not be defeated when he is not. Work with the person to find solutions and avoid adversary positions. When reaching an impasse use a group consultation approach to avoid a win-lose situation.
- Do not compromise because it is convenient. Compromise only if your goal does not suffer any significant damage. Be both patient and tenacious in your negotations with others.
- Approach each person with respect for his competence and potential contribution. However, never assume that any one person is aware of all the dimensions of a regulation. When confronted with a regulation barrier, request a detailed reason why it cannot be done.
- Lastly, remember that regulations are intended to facilitate programs and insure quality even though at times they appear to hamper goal achievement. When constrained by regulations, search for all possible alternatives by viewing the problem through other than the routine framework. Also, do not permit others to enforce regulations without justifying them to you. Encourage an enforcer of regulations to assist you in achieving your goal via the regulation.



The Congress Street Wharf



Building Section – Intial Phase

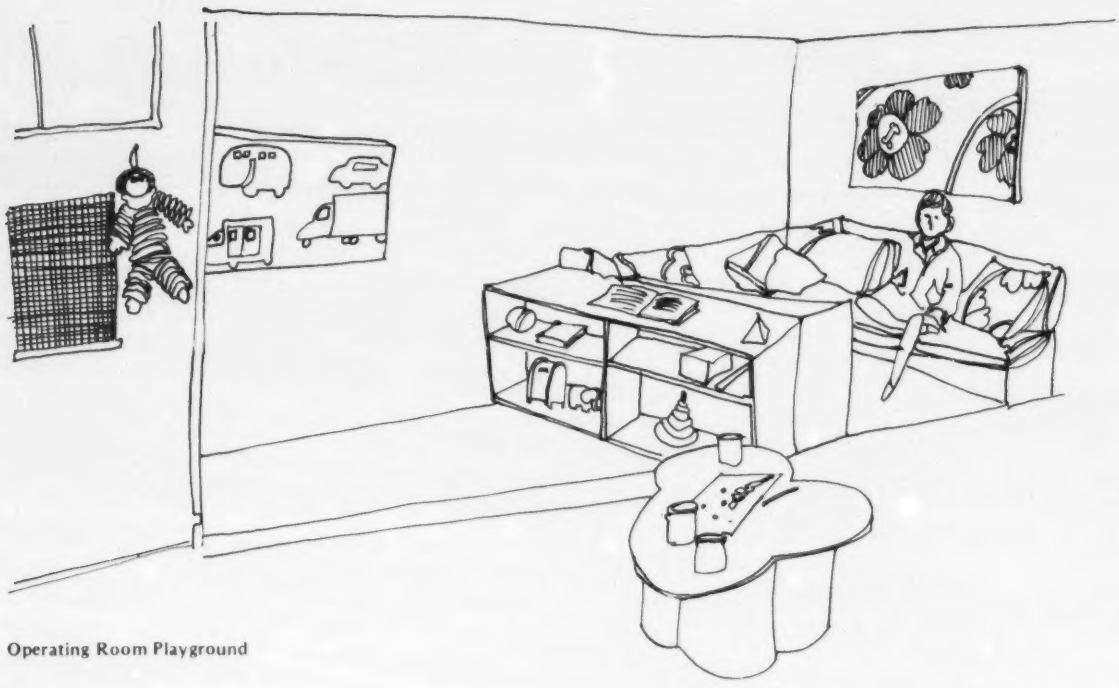
(Continued from page 27)

administrative offices, meeting rooms, elevators, and toilets. Each museum will have its own exhibit, program, classroom, and collections areas. Approximately 15-25,000 feet of space will be reserved for compatible retail and food services.

This joint project will be known as The Congress Street Wharf.

(Continued from page 15)

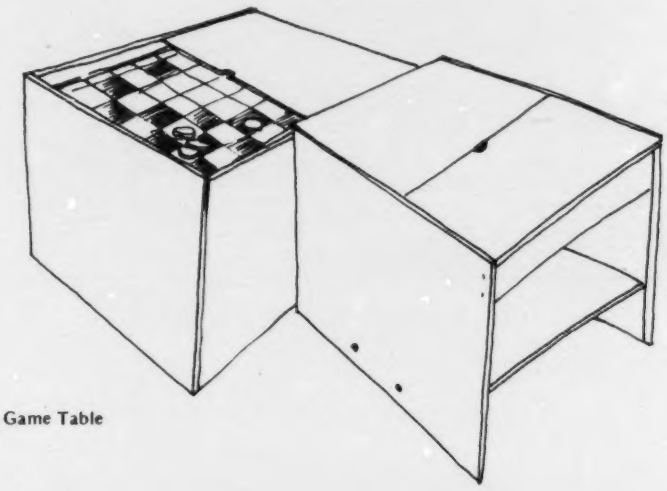
- Only four graphic shapes are included in the wall designs: triangle, square, circle, wave. Shapes were kept in their own group: there are, for example, no squares within circles; within a large circle are only circles of smaller diameter.
- The wall was inexpensive and was readily built with ordinary materials. Building materials utilized were "found" – plywood, particle board, paper. These were laminated and assembled with common wood glue and standard tools, such as saws and hammers. The wall units were built separately and were brought in and installed in sections. It was not necessary to put the entire room out of commission while the wall was being installed.



Operating Room Playground

(Continued from page 32)

Operating Room Playground. This shows some of the major facilities provided in the Operating Room Playroom at the hospital to which all children who will have surgery go for 15 minutes to half hour prior to their operation. The intention was to create calming, involving, and supportive activities and spaces for the children and their parents prior to this traumatic experience. Every child is accompanied by one or both parents in this room, and it frequently must accommodate as many as 18 adults and 9 children at a time. The room is small and must also accommodate the infant through 19-year age range, with particular concern that teenagers feel they have a place to go and a possibility for engaging in activities of interest to them. From left to right is depicted a playframe, a low 4 inch high platform with storage unit, with the puppet theatre visible across the front. This is also a means of getting some of the activities down low on the floor and relieving the sense of congestion. Similarly, the low table with the round tube bottoms, intended as a clay table or low activities table, encourages children to use the floor as a sitting surface. The change in levels is an intentional attempt to make better use of the limited amount of space available and to provide some distinct boundaries for areas which should remain somewhat open and accessible to the entire room. The level at the rear is a carpeted banquette 8 inches off the floor designed intentionally for teenagers as a place in which they can sit comfortably to read or play games. The wooden book and magazine rack facing it and abutting the blue toy storage shelves displays these materials to users of the banquette This is also a comfortable place for adults and children to sit near one another during this stressful period. In addition, the room contains tables for arts and crafts activities and further seating units.

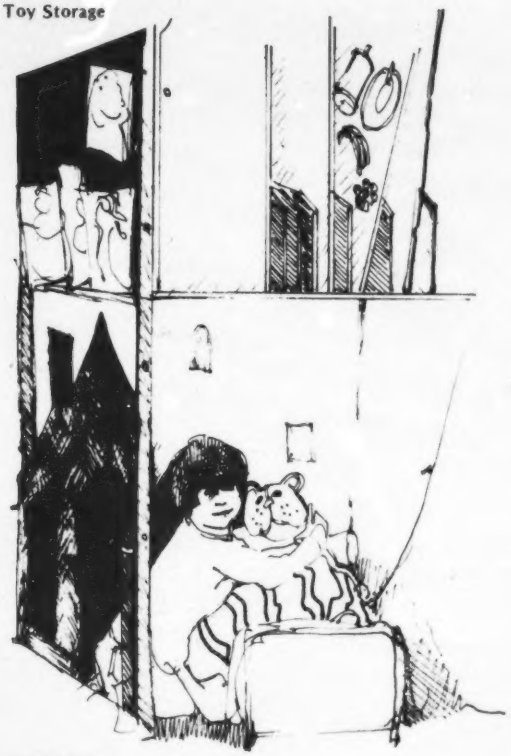


Flap Game Table

Flap Game Table This is a table designed for many purposes, especially out-patient waiting areas. When the surface flaps are closed, the table can be an end table, a coffee table, a surface to put things upon, a stool seat, or a foot rest. When the flaps are open, as one flap depicted here, they reveal a small trough inside, in which can be placed puzzles or games and game pieces. This table is particularly useful in public waiting spaces where game boards and their pieces can be accessible to use and run less risk of pilferage and loss due to the movement of persons through the space. It is also a means of allowing temporary interruption and resumption of a game in progress.

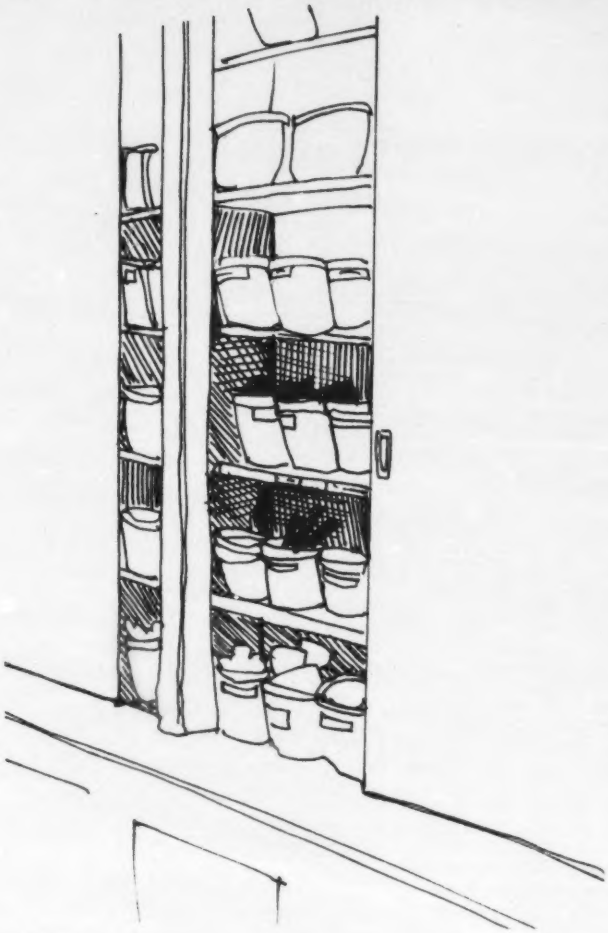
Child Sofa These are little sofas designed at a seating height of 12 inches above the ground to allow several children to sit together and to form a small seating cluster. They were intentionally designed for open spaces which require some delimitation of boundaries but where for fire or other reasons the boundaries cannot be firm and rigid such as walls. Adults can also sit comfortably on this little sofa.

Toy Storage



Child/Frame

Child/Frame Again this depicts the playframe with houseframe panel mounted across the front two uprights, and shows the small but adequate amount of interior space being used by a child playing house with a doll crib and teddy bear. This child is also on an I.V. pole but is able to play freely within this small area while her I.V. pole stands outside. The upper portion of the picture shows the storage unit of the playframe including a locked cabinet on the left and slots to hold the numerous panels on the right.

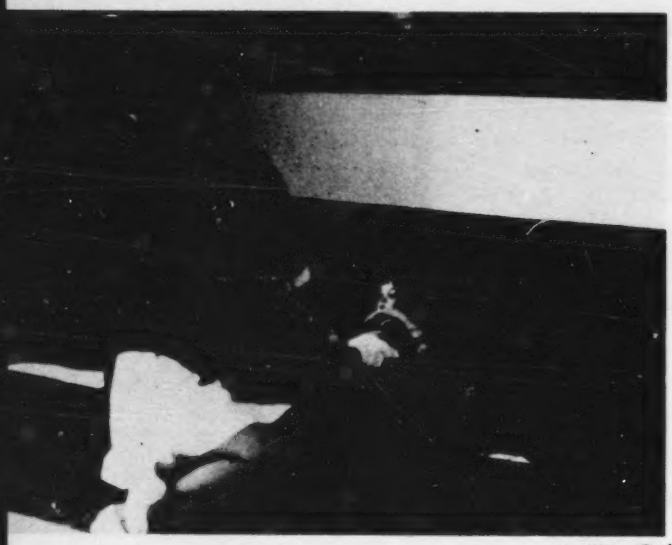


Storage

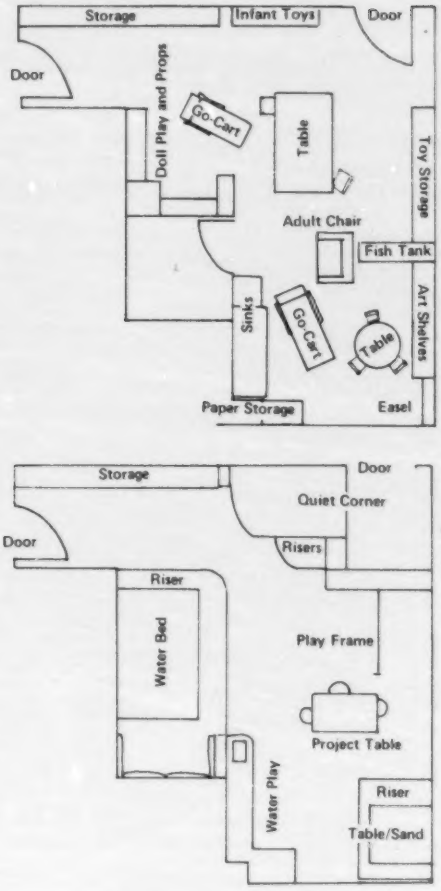
Toy Storage This is a small carpeted area within the room which is bounded by carpeted risers in order to make a pit-like enclosed play space for young children and their toys. On the back wall are wall-mounted book racks to support a display of books with their covers visible. The toy storage unit depicted has a small lip around the shelves in order to prevent the toys from easily falling or rolling off the shelves. The unit is approximately 12 inches high and thereby encourages children to stay down low on the carpeted surface.

Storage This depicts the bulk of the storage facilities for crafts and manipulative activities that take place within the room. The play leader has placed the materials in mushroom cartons, which are available free-of-charge at supermarkets and vegetable stands. Each mushroom carton has been carefully labeled as to its contents, and a similar label has been placed on the shelf where the carton belongs. In this way users of the room know exactly what is available for use and also that each

(Continued on page 44)



Water Bed



Top: A floor plan of the playroom prior to renovation shows the clutter and congestion which occured with only two go-carts in the room.

Bottom: The improved definition of play areas in the renovated room increases the room's usefulness and also provides more cleared floor space.

(Continued from page 42)

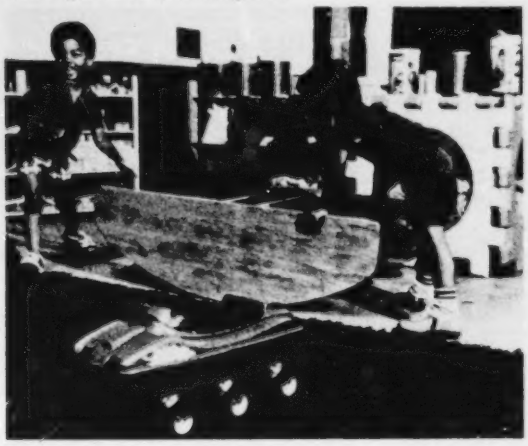
thing has a place and where that place may be. During times when the playroom was open 24 hours of the day, most of those hours being periods when the room was not supervised, it was the case that adults quite consistently used and conscientiously returned materials to their storage location. This is but one way in which storage may effectively organized in a public place to ensure proper care, concern, and use of valuable and desirable play things. Please note that this storage is **not for children** but rather for adults. Storage for children must be much more accessible to them, at their own height, where they may easily see into and across the top of the storage containers since they usually cannot read the labels on the containers. Appropriate storage for young children is better depicted on the slide of the toy shelf in this same room.

Water Bed This depicts a twin-sized water bed placed in the playroom near the playroom entry. The water bed is rimmed by a 10 foot high carpeted platform on which people may also sit. The water bed has a heater underneath it to maintain a comfortable temperature but also has a quilt on top which is essential for comfort and for providing a cover so that children do not stick to the shiny slick surface of the water mattress. Quilts can be made in colorful patterns and textures and thereby be interesting stimulation devices for infants. The water bed is frequently a comfortable, secure, responsive place to rest. Water beds are felt to be a stimulation for developmentally delayed and failure-to-thrive babies, as well as sources for the release of energy for more energetic children. The water bed provides excellent means for passive involvement in the activities of the room and has proved to be an excellent transition space for adults and children who may be hesitant to come into a room or immediately engage in the activities therein. It is also a facility which permits tired parents to assume a reclining, restful position in public.

(Continued from page 24)

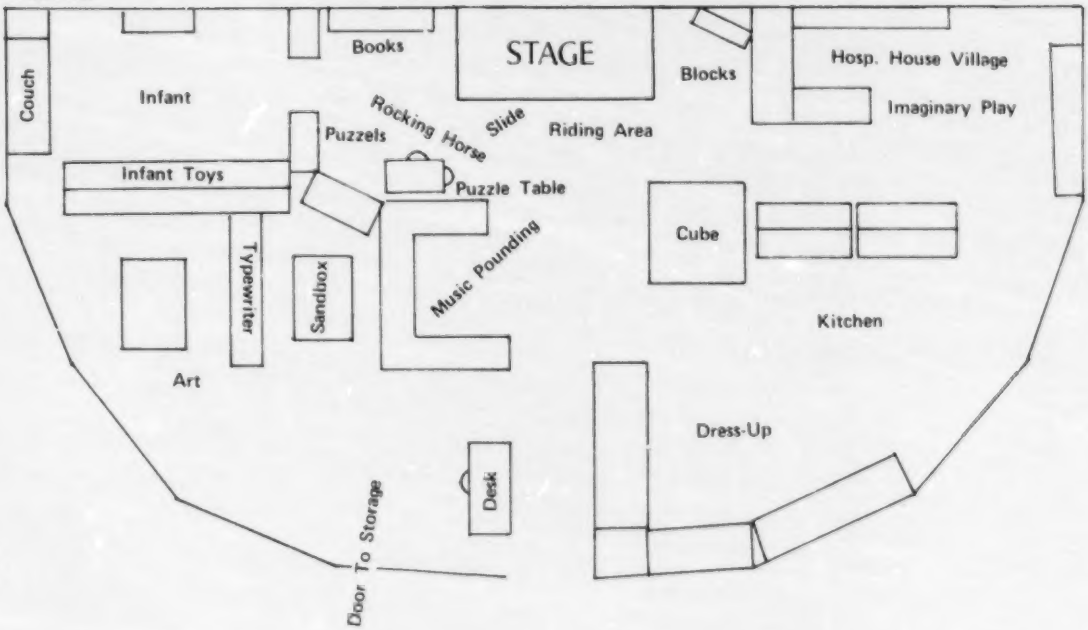
from being overstimulating. The large motor area in the center of the library is the crossroads to the eight other more secluded play areas. These areas are defined by the placement of three-foot-high shelves and by the direction they open. The art table, for example, is like a dead-end street and only children who want to do art venture past the sand table to get there. In the same way, a child playing with a dollhouse is protected from other children on riding toys on their way to put out fires or rescue mountain climbers, and the staff does not have to cope with dollhouse pieces spread over the entire library. The carpeted stage in the center of the library is a safe haven for newborns and an excellent vantage point for tired children who want to hear a story and yet be in the middle of everything.

Climbing Cubes and Rocking Boat



A special place for parents and children.

Floor Plan



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settings invite children to involve themselves in particular activities, and the extent of children's constructive participation in the activity will depend in large part on how well certain concrete measurable aspects of the surrounding physical space meet their 'hunger, attitudes and interests,'" and is therefore dealing with ways spatial arrangements "can be used to support goals for young children" (p. 4).

Playground design publications include *Elements of Preschool Playgrounds* (1973) by R. Helick and M. Watkins, which provides descriptions of the playground designed for Pittsburgh's Louise Child Care Center; *Play and Playgrounds* (1976) by Jeannette G. Stone; *Play Structures* (1974) by G. Ellison; and *Build Your Own Playground* (1974) by Jeremy J. Hewes. Literature on interior room design for young children includes the classic and still most valuable *Understanding Children's Play* (1952) by Hartley, Frank and Goldenson. An interesting recent body of work in this area is provided by Montes & Risley at the Living Environments Group at the University of Kansas. A recent study from this group, for example, gathered data on how storing and displaying materials in different ways affects children's play activities.
Such data, as the authors suggest, provide "samples of the way empirical observation and research can help preschools of any curricular design to improve their programs by making changes in particular procedures" (p. 215).

A prolific source of various material on environmental design of children's centers is the Educational Facilities Laboratories in New York City; among their several publications is *Patterns for Designing Children's Centers* (1971).

Research in Environmental Design

"It is very important to present," says Roger Barker in *Ecological Psychology: Concepts and Methods for Studying the Environments of Human Behavior* (1968), "a systematic account of the methods and concepts for investigating the ecological environment" (p. 3). In keeping with this statement, he offers one of the most well-known works on the methodology of environmental research, defining and elaborating on the behavior setting, a technical and complex concept providing a means of studying the impact of the environment on behavior. In a broader context, such works take the practice of environmental design out of the realm of intuition and give it a solid empirical base. An articulate discussion of the challenges and problems in mounting research on behavioral effects of environmental factors is found in the "Introduction" to *Environment and the Social Sciences: Perspectives and Evaluation* (1972) edited by Wohlwill and Carson.

A particularly important aspect of the research-oriented literature for the practitioner is that on evaluation of environments, so that the quality of a particular setting along various predefined variables can be established. *Evaluating Treatment Environments* (Moos, 1974) and *Evaluating Correctional and Community Settings* (Moos, 1975) are, as their titles suggest, major works. *Planning Environments for Young Children* (Kritchevsky, Prescott & Walling, 1968) and Harms' *"Evaluating Settings for Learning"* (1970), which offers a straightforward checklist on various aspects of the physical environment, are among materials in the early childhood literature on evaluating environmental aspects of a setting.

Resources in Environmental Design

This is a brief survey attempting to highlight readings in the major categories of literature on the theory and practice of environmental design as it relates to human service work, particularly that with children. It should be pointed out that there are extensive additional sources in this burgeoning field, including collections of papers, bibliographies, and journals. Among the organized compendia of papers representative of its various aspects are *Environmental Psychology: Man and His Physical Setting* (Proshansky, Ittelson & Rivlin, 1970), *Environment and Social Science*, Wohlwill and Carson (op. cit.), *Environment and Cognition* (Ittelson, ed., 1973); *Issues in Social Ecology* (Moos and Insel, eds., 1974), and the *Human Context* (Moos, 1976). Craik's "Environmental Psychology" in the 1973 *Annual Review of Psychology* includes an extensive bibliography;

the child-focused reader will find the bibliography in *Ecological Psychology and Children* (Gump, 1975) useful. A comprehensive bibliography on "Milieu Therapy and Administrative Psychiatry," including sections on assessing treatment environments and the theory and practice of milieu therapy, is available from the Journal Supplement Abstract Service of the American Psychology Association.

Ongoing work in the field can be followed in such journals as *Behavioral Science, Environment and Behavior,* the *Journal of Experimental Behavior Analysis, Behavioral Ecology, Social Biology, Environmental Psychology and Non-Verbal Behavior,* and *Social Science Information.*

"The current upsurge of interest in the human environment is remarkable. More books treating man and his environment from a holistic point of view have appeared during the prior three decades" (Moos, 1976, p.3). The following topic bibliography, which also includes works not cited in this report, is intended to introduce the reader to some of these.

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